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ABSTRACT

To summarize recent government efforts in scientific and technical information management, this report presents highlights of more than 60 federal programs in 15 executive departments and independent agencies, the Smithsonian Institute, the Government Printing Office, and the Library of Congress. It begins with a summary of trends and developments, and then reviews the information activities within each agency. Summaries include descriptions of information needs, agency responsibilities, technology employed, and organizational structure. (EMH)

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FEDERAL SCIENTIFIC AND TECHNICAL COMMUNICATION ACTIVITIES: 1975 PROGRESS REPORT

U S DEPARTMENT OF HEALTH,
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NATIONAL INSTITUTE OF
EDUCATION

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Division of Science Information
National Science Foundation
Washington. D.C. 20550

June 1976

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FOREWORD

From 1963 to 1971, COSATI arranged for publication of an annual report that described the activities of Federal scientific and technical information programs. In 1974, the Office of Science Information Service, National Science Foundation, suggested resumption of the annual reports. Federal agency scientific and technical information managers agreed that such a report would be useful and supplied material for developments during 1974. The resulting report is available from NTIS: "Federal Scientific and Technical Communication Activities: 1974 Progress Report," PB 242 318, June 1975.

The following report represents the second in the renewed series. This report presents highlights of more than 60 Federal programs in 15 executive departments and independent agencies, the Smithsonian Institution, Government Printing Office, and the Library of Congress. It also includes a new feature. This 1975 report has been augmented by the addition of the first chapter on "Developments and Trends," prepared by Mr. Scott Adams.

Many persons and organizations contributed to preparation of this report. Appreciation is extended to managers and staff of each agency represented in the 1975 report; to Mr. J. M. Sonies, who edited the publication under Contract NSF-C743 with the Department of Medical and Public Affairs, Science Communication Division, The George Washington University; to Mr. Scott Adams for his analysis and summary of developments and trends in agency scientific and technical information programs; and to Mr. Andrew A. Aines and Mr. Eugene Pronko, who managed the overall effort.

The Division of Science Information, National Science Foundation, is pleased to make this 1975 progress report on Federal scientific and technical communication activities available.

We ask readers to direct comments on specific agency reports to the appropriate agencies or to the Division of Science Information regarding the report as a whole. Your comments can help make the 1976 report more useful.

Lee G. Burchinal

Lee G. Burchinal
Director
Division of Science Information
National Science Foundation

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DEVELOPMENTS AND TRENDS

I. INTRODUCTION

The year 1975 was a year of consolidation and regrouping for many of the Federal agencies which have contributed to this progress report on Federal agency scientific and technical information programs. Generally, throughout the Federal establishment, it was a year of reduced budgets and manpower ceilings, a circumstance which led to a concern for improved management and increased cost effectiveness.

At the level of national planning and policy formulation, the Federal establishment marked time. Legislation to reestablish a Presidential science advisor did not record significant progress in its passage through the Congress. While the National Science Foundation's Office of Science Information Service sponsored periodic meetings of the managers of Federal scientific and technical information systems to discuss common problems, and the National Commission on Libraries and Information Science published *Toward a National Program for Library and Information Sciences: Goals for Action*, there was no move to reconstitute policy and planning functions at the national level within the Executive Branch.

By contrast, the Congressional Branch demonstrated a revival of interest in scientific and technical information. Rep. Olin E. Teague, in introducing H.R. 9058 in July 1975, noted: "It is recognized as a responsibility of the Federal government not only to coordinate and unify its own scientific and technical information systems, but to facilitate the close coupling of institutional scientific research with the commercial application of the useful findings of science." In his bill, Mr. Teague proposed the establishment of a Federal Science and Technology Survey Committee which would give "particular attention to needs for . . . improvements in existing systems for handling scientific and technical information on a government-wide basis."

The Senate Committee on Labor and Public Welfare's Special Subcommittee on the National Science Foundation, chaired by Sen. Edward M. Kennedy, commissioned the Congressional Research Service of the Library of Congress to do a retrospective study of the role of the Foundation in the Federal management of scientific and technical information (STI) activities. Noting a need for the coordination of Federal STI programs in such areas as energy, the environment, technology transfer, and in the international field, the report recommended the reestablishment of an advisory group reporting to the President's science advisor, the authorization of such a group to be included in any legislation establishing an Office of Science and Technology in the White House.

In addition, the General Accounting Office maintained a continuing interest in the cost effectiveness of major Federal STI programs. Federal agency STI programs, by virtue of their size and funding, have a major impact on the directions taken by specialized information services throughout the country. In spite of prevailing budgetary and manpower restrictions, the specialized information services and systems components of the Federal establishment made continuing contributions toward the accomplishment of their agencies' missions. The reports which follow have been contributed by the agencies in evidence of this fact. For this reason, it seems useful in this introductory chapter to highlight selective accomplishments, and to attempt to identify trends in the utilization and application of information technology by the Federal agencies.

A survey of the agency reports suggests the existence of certain government-wide trends. Among these are:

(1) The agencies are making a more intensive use of communications and systems technology for their specialized applications;

(2) Agencies which conduct large public service systems are increasingly concerned with the recovery of costs;

(3) There is an increased use of private contractors to develop and operate agency information systems;

(4) There is an increasing concentration on information systems and services that support technology transfer to small business;

(5) The international dimensions of agency information programs are steadily increasing;

(6) Bilateral interagency cooperation continues to grow;

(7) Agencies are tending to involve established libraries increasingly in their information systems and services.

II. USE OF COMMUNICATIONS TECHNOLOGY FOR SPECIAL AGENCY APPLICATIONS

As new generations of trained manpower succeed to the operation of agency programs, there is an increased use of information technology in their conduct and management. Applications vary widely, and it is not possible to comment on all. Representative instances of agency utilization, however, may be noted:

In the field of computer systems, the Institute for Computer Sciences and Technology of the National Bureau of Standards continues to play its central role of monitoring ADP systems design and applications, nationally and internationally, and developing Federal standards and guidelines for information processing. The Department of the Army's integrated software research and development program (ISRAD) became a significant component of the Army's STI activities. NTIS reported that the magnetic tape library, supporting of the Federal Software Exchange Center now has some 10,000 magnetic tapes on file.

A comparable effort to reutilize computer software is the Computer Software Management and Information Center (COSMIC), operated by the University of Georgia under contract to NASA and with the participation of agencies of the Department of Defense.

With the transfer of the mathematics and computation laboratory of the Corps of Engineers, Department of the Army, to the Federal Preparedness Agency, under the General Services Administration, GSA acquired a major resource for computer systems support of its R&D program.

Computer Output Microfilm (COM) is being increasingly used, with EPA utilizing it in its Pesticide Analysis, Retrieval and Control System (PARCS), and with the Smithsonian Science Information Exchange using computer output microfiche programs to prepare a directory of pesticides and pest control research for EPA. NTIS expanded its use of COM applications during 1975, and will convert its master subscription files to COM during 1976. The National Agricultural Library also reports its use of COM to replace bulky printouts of serials information. GSA, in support of this trend, produced a *Computer Output Microfilm Handbook for Potential Users of the Technology in the Federal Government.* The Handbook is intended to provide guidance in the application, design, and use of COM systems.

Apart from its continuing concern for the development and use of MARC data bases, the Library of Congress recorded significant progress in accessing the National Referral Center's data base on information resources through two avenues: its own SCORPIO (Subject Content Oriented Retriever for Processing Information Online) system, and the ERDA/RECON system network. Concurrently, the Library's Science and Technology Division installed a video terminal to provide search service on data bases made available through System Development Corporation's ORBIT and Lockheed's DIALOG programs. Even more significant was the increase during the year of online computer terminals in Congressional offices. Their number had increased from 12 in July 1975 to 92 in the Senate and 60 in the House of Representives by December. Searches of the Library's data bases through SCORPIO averaged 700 per day at year's end.

In other specialized applications, the Defense Documentation Center (DDC) reported the successful use of its Machine-Aided Indexing (MAI) system throughout the year for retrieval-term assignment. The National Library of Medicine completed its demonstration program which involved over 80 medical schools and hospitals in a project to share computer-assisted instruction (CAI) on a nationwide time-sharing communications network.

Networking to provide online access to computer-retrieval systems had a healthy growth during 1975. DDC reported that 64 terminals were linked to its central computer in 1975; the reports from the Army, Navy, and Air Force show increasing utilization of the Defense RDT&E online system. At the National Library of Medicine, the MEDLINE family of data bases continue to grow. Some 350 health-science institutions had MEDLINE terminals during the year. NASA reported steady use of its RECON system by the space industry, registering 9,000 searches in addition to those performed by NASA employees.

ERDA also reported a considerable expansion of its version of RECON. By the end of 1975, interactive searches were available at some 60 terminals and the number of data bases available had been significantly increased.

In the area of telecommunications, the Lister Hill Center of the National Library of Medicine completed its demonstration uses of the use of the two-way video capability of the ATS-6 satellite for remote health services in Alaska. NOAA's National Environmental Satellite Service (NESS) made regular and continuing utilization of satellites for the sensing and transmission of environmental data. The Office of Telecommunications, Department of Commerce, continued its productive studies of specialized communications problems in Federal agency programs.

III. REORIENTATION OF PUBLIC SERVICE SYSTEMS TO COST RECOVERY BASIS

Although no standard interpretation of Circular A-25 of the Office of Management and Budget was achieved during the year, the Federal agencies continued a long-established trend to recover the costs of the information services provided. The Department of the Navy reported that the Shock and Vibration Information Center (SVIC) was one of the few Federal information analysis centers deriving more than half of its support from subscribers to its services. DDC has adopted this 50% standard return ratio as a target for the ten information analysis centers to whose support it contributes. The National Library of Medicine's Board of Regents revised the

Library's rate structure for online services from the MEDLINE family of data bases and is currently studying the broader question of the imposition of user charges for the Library's services. NASA instituted user service charges for the automatic distribution of documents announced in *STAR (Scientific and Technical Aerospace Reports).*

By Federal regulation, NTIS is obligated to recover costs from the production and sale of its information products and services. During 1975, NTIS reported increased efforts to promote and market Federal information products for which it acted as principal distributor.

It should be noted that just as there is no standard costing practice for Federally generated services, so there is no standard pricing policy for products and services. Microfiche, for example, are available from a number of the agencies, including the Superintendent of Documents, and are sold at a variety of unit prices.

IV. USE OF CONTRACTORS TO ACCOMPLISH AGENCY PROGRAMS

Faced with responsibility for developing complex sophisticated systems in new interdisciplinary fields, the Federal agencies have for some time contracted with industry and with universities to augment their scarce manpower. AEC, NASA, and DDC were prototype agencies in this regard. The interaction of government agencies and the information industry constitutes a vigorous tradition. During 1975, a number of government procurements were made. Some of the significant ones are noted below.

Informatics, Inc. continued to operate the Government-owned NASA facility, which was moved from College Park to Linthicum, Md. Informatics, Inc. also received the contract to develop the Shared Information System for the Office of Noise Abatement and Control of EPA.

EPA also awarded a contract to Arthur Young and Company to review and evaluate its automated technical literature search systems: Solid Waste Information Retrieval System (SWIRS), noise information system (NOISE), Air Pollution Technical Information Center (APTIC), its pesticides technical/library research system, and the EPA library system itself.

NOAA contracted with Lockheed Missiles and Space Company, Inc. to make available two major bibliographic data bases: Oceanic Abstracts, and Meteorological and Geoastrophysical Abstracts. As of the end of 1975, Lockheed had achieved agreements to market five of the Federal bibliographic data bases, including (in addition to the two NOAA bases) ERIC, NTIS, and CAIN; Systems Development Corp. had four: CAIN, ERIC, NTIS, and SSIE.

Auerbach Associates, Inc., under contract to DDC, conducted a major survey of requirements for scientific and technical research data within the DDC-user community for the next ten years. The Auerbach study of necessity covered broad areas of technology related to defense, and examined the programs of multiple Federal agencies.

V. GOVERNMENT/SMALL BUSINESS TECHNOLOGY TRANSFER

Efforts to support the utilization by American business of innovations generated through Federal R&D programs constituted a principal dynamic of the programs of a number of agencies. NTIS, as the principal civilian agency concerned with the dissemination of this information, distributed some 4 million documents and microforms to a user community consisting of small businessmen, large corporations, Federal, state and local governments, consultants, researchers, scientists, and libraries. NTIS expanded its *Weekly Government Abstracts* to include 26 different categories; it had under development a program designed to exploit government-owned patents, to foster the domestic economy, and it provided its customers with searches of a data base comprising some 450,000 research reports published since 1964. NTIS increased its overtures to state and local government groups to establish mechanisms to assist the utilization of Federally generated technical information.

In the Department of Defense and its service departments (Army, Navy, Air Force), increased emphasis was placed on liaison activities with the community of information users. The long-range study of user requirements conducted by Auerbach Associates has been mentioned. DDC programs emphasized the training of users and the utilization of defense information systems. The Navy continued its lead role for its GIDEP program, which currently provides defense contractors with access to four data bases: Engineering Data Bank; Failure Experience Data Bank; Failure Rate Data Bank; Metrology Data Bank. Navy's Research and Development Information Center (NARDIC) served industry, universities, and nonprofit institutions, and its West Coast activities were closely coordinated with the Army Technical Information Liaison Office (TILO), located in Pasadena.

Through conferences with representatives of small businesses, an advanced planning briefing, organization of workshops on technology transfer, and participation in NATO's Advanced Study Institute on Technology Transfer, the Navy's information activities were concentrated on the transfer of technological expertise from government to industry and from plant to plant within industry.

ERDA completed its second year of participation as a civilian agency in GIDEP.

The Air Force was also an active participant in the GIDEP program, as was the Army. The Air Force contributed a new data bank for aircraft maintenance, techniques and procedures and for selected commercial aviation repair facilities to the GIDEP program, and enhanced the Metrology Data Bank by the transfer of the Secretariat for Electronics Test Equipment.

On the civilian side, while NTIS is the lead agency for the transfer of Government-generated technological information to American industry, other technologically oriented agencies were active.

The Department of Transportation, through its publication *Technology Sharing: a Guide to Assistance in Obtaining and Using Research, Development and Demonstration Outputs,* demonstrated an agency-wide commitment to technology transfer.

One of the classic functions of the Patent and Trademark Office is the dissemination of information concerning technological innovations; its role in technology transfer is basic. Of particular interest are the data bases produced by the Office of Technology Assessment and Forecast (OTAF), of the Patent Office. These data bases are used by OTAF to study the socioeconomic effects of technological innovation.

Finally, a description of the role of Federal agencies in assisting industrial development through information services would be grossly incomplete were the specialized information services provided through the National Bureau of Standards not included. To the Bureau's classic services covering weights and measures, engineering and standards information must be added the newer information programs on Consumer Products, Building Research, and Fire Research.

In 1975, NBS reorganized its National Standard Reference Data Program (established to promote and coordinate the critical evaluation of numerical data in the physical sciences) into four compartments: Energy and Environmental Data, Industrial Process Data, Materials Utilization Data, and Physical Science Data. The reorganization was calculated to make this major program increasingly responsive to industrial needs.

VI. INTERNATIONAL DIMENSIONS

To the continuing international interests of the STI programs of the Federal agencies, the Department of State added a new dimension—the Kissinger initiative. In a speech before the 7th Special Session of the United Nations in November 1974, Mr. Connally, speaking for the Secretary of State, proposed the establishment of an international center for the management of technological information related to the transfer of technology to developing countries. This, and other proposals in the UN, occasioned a year-long review both from a policy viewpoint (what might the specifics of a U.S. proposal be?) and from an operational viewpoint (what are the individual agencies doing to abet the flow of technological information to the Third World countries?).

The Office of Science Information Service of the National Science Foundation, together with NTIS and AID, played central roles in advising the Department of State, and assisted in the development of U.S. positions which supported the optimization of networking arrangements among existing services, as opposed to the creation of new UN facilities.

Elsewhere, the Foundation engaged in bilateral activities involving seminars and symposia with Egypt, Mexico, Japan, and India, and continued its support of meetings of specialized task forces in the implementation of the US-USSR cooperative agreements in science and technology.

The Foundation continued to represent U.S. interests in UNESCO's UNISIST program, through its membership on the Steering Committee and its Bureau, and by representing U.S. interests in the Information Policy Group of OECD. It also continued support for U.S. participation in CODATA, ICSU Abstracting Board, and the International Federation for Documentation (FID). During the year, the National Academy of Sciences' Committee on International Scientific and Technological Information Programs (CISTIP), under contract to NSF, developed criteria for the evaluation of benefits to be derived from U.S. participation in the activities of international information organizations.

The Agency for International Development (AID) achieved a new focus in 1975 for information activities relating to the accomplishment of its mission. A continuing committee, DISC (Development Information Systems Committee), served to explore sources of information related to international development; *AID Research and Development Abstracts* completed its third year, and the Agency underwent a reorganization which involved the appointment of a coordinator for its information functions and services.

At the operational level, NTIS, with assistance from AID, expanded its services to developing countries, identifying national agents to assist in the marketing of U.S. technical reports. NTIS now has cooperative agreements in Colombia, Ecuador, Guatemala, Korea, Pakistan, the Philippines, Nigeria, and Thailand.

In collaboration with the UNISIST Program and with assistance from NSF, the Smithsonian Science Information Exchange (SSIE) organized a symposium attended by 185 individuals from 49 countries on information systems and services in ongoing research. The general purpose is to insure a higher level of compatibility among national systems, so that they may exchange information on ongoing research and development.

In an interesting effort to insure document availability, the National Library of Medicine engaged in a program to use Telex to transmit unfilled interlibrary loan requests to the Lending Division of the British Library in Boston Spa, Yorkshire; this may become the prototype of an international interlibrary referral and lending system in the biomedical sciences.

The Library of Congress entered into international agreements, first with the National Library of Canada and later with the Bibliotheque Nationale of France, for the non-exclusive exchange of MARC records of national cataloging products. Negotiations are under way with the National Library of Australia.

ERDA announced the discontinuance of its long-supported *Nuclear Science Abstracts (NSA)* and its future dependence on the *INIS Atomindex* of the International Atomic Energy Agency, which has been developed with U.S. assistance. In addition, ERDA has a number of successful bilateral information exchange arrangements with foreign governments, and has been actively participating in the growth of the UN Environmental Program/International Referral System (UNEP/IRS).

NASA continued its close cooperation with the European Space Agency (ESA) and participated actively in the Technical Information Panel of NATO's Advisory Group for Aerospace Research and Development (AGARD). NASA's Scientific and Technical Information Office now maintains bilateral exchange agreements with 228 governmental, industrial, research, academic, and other organizations in more than 54 countries.

EPA was formally designated as the U.S. National Focal Point for inputting information relating to U.S. sources of information on environmental quality to UNEP, located in Nairobi, Kenya. While the National Agricultural Library is the designated focal point for participation in the UN Food and Agricultural Organization's International Agricultural Information System (AGRIS), insufficient resources and incompatible records have kept its contributions to a minimum.

In summary, three aspects of increased Federal participation in international information activities emerged during the year. These were: (1) a new thrust relating to the use of government information services to meet the needs of developing countries; (2) an increased interdependence to reduce the costs and improve services of large governmental systems; and (3) an increasing requirement to provide inputs to information retrieval systems under cooperative development by agencies of the United Nations.

VII. INTERAGENCY COOPERATION

The agency reports for 1975 abound with examples of collaborative activity. Generally speaking, these fall into two categories. An agency with unique capabilities has made them available to other Federal agencies under mutually advantageous conditions, or two or more agencies have cooperated to solve a commonly recognized problem.

The outstanding capability of NTIS to open up markets for governmentally-produced information products and services has led to a series of interagency agreements. The Department of Transportation reports an agreement with NTIS under which the latter serves as a depository and distributor for DOT technical documents. The National Library of Medicine uses NTIS to distribute the technical documentation relating to MEDLINE services. NTIS serves as a primary distribution agency for EPA's *Monthly Energy Review, Monthly Petroleum Statistics,* and the *Quarterly Energy Information Reported to the Congress,* as well as for NASA's *Quarterly Energy Bibliography*. These are but a few of the many announcement and distribution services which NTIS performs by agreement for other Federal agencies.

Another example which may be noted is the use by other Federal agencies of ERDA's RECON system for online retrieval by such agencies as the National Referral Center at the Library of Congress, EPA, and the Water Resources Scientific Information Center of the Department of the Interior.

Other examples of interagency cooperation may be found in the agreements entered into by SSIE with the National Cancer Institute and the National Library of Medicine for the servicing of ongoing cancer research information, and with ERDA for ongoing research information in energy fields. Also to be mentioned are the agreements reported by NASA with DDC and with NOAA for accessing each others' data bases, and the bilateral interagency agreements entered into by the NOAA's Environmental Data Service with the Departments of the Navy, Transportation, and Agriculture, NASA, NSF, and others.

The conversion of library and bibliographic records relating to serials (particularly in science and technology) has constituted a classic arena for interlibrary cooperation. With the advent of a major cooperative thrust (CONSER or Conversion of Serials), involving research libraries of the United States and Canada, the Library of Congress reports a surge of activity. The National Serials Data Program, initiated by the three national libraries for serial publications in fields of science and technology, is now absorbed in this larger cooperative effort.

Libraries have proved indispensable to the information programs of a number of the Federal agencies reporting, both as foci of decentralized information services and as document repositories and delivery points. Hence, an increasing number of agencies report efforts related to the strengthening of library services.

The National Agricultural Library awarded grants to eight land-grant university libraries to introduce interactive searches of its CAIN system. NAL, in addition, cooperated closely with the Ohio College Library Center (OCLC) to make its cataloging records in machine-readable form more generally available. The regional structure of NAL's document-delivery network, associating the libraries of land-grant universities closely with NAL, was expanded to include 20 states by the end of 1975.

The Government Printing Office vigorously attacked its backlog of publications for distribution to depository libraries. With the installation of an OCLC terminal, the Library of the Superintendent of Documents launched a program to input cataloging data for government publications into the OCLC network, thereby greatly enhancing its service to the 700 libraries now in the network.

The Department of the Army also reports the Army Library's use of OCLC to provide access to cooperatively-produced cataloging copy. NASA reports adding the cataloging records for post-1968 books and journals held by 12 NASA research libraries to its RECON data base, and the creation of a NASA Library Network (NALNET), with online access to over 170,000 book citations and 6,000 journal titles.

The National Science Foundation reports that a successful experiment in California demonstrated the effectiveness of public libraries in linking small industrial firms with STI data bases.

The foregoing highlights can only suggest the great variety of specialized information programs undertaken by the Federal agencies in the pursuit of their missions. For further information, the reader is invited to review the agency chapters which follow, and, for still more information, to correspond with the responsible agency officials whose names are appended to the individual chapters.

DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

In 1975, the Agricultural Research Service (ARS) added the full Commonwealth Agricultural Bureau (U.K.) data base on magnetic tape to its computer-based Current Awareness Literature Service. This brought to eight the total number of data bases from which selective dissemination of information (SDI) and retrospective search services are provided to more than 1400 scientists in USDA. More than 12,000 SDI profiles are run on the following data bases: Biological Abstracts/BioResearch Index (BA Previews), Chemical Abstracts, Commonwealth Agricultural Bureau, Food Science and Technology Abstracts, Government Reports Announcements, National Agricultural Library (CAIN), and World Textile Abstracts.

Retrospective searches are provided on a monthly basis; approximately 100 searches are run each month. Coverage of the back files varies from 1970 to date for BIOSIS, Chemical Abstracts, and CAIN, to 1972 or later for the other files.

Citation print-outs sent to scientists include preprinted library loan forms allowing the user to directly request copies. By submitting the print-out to his nearest land-grant college library or to the National Agricultural Library, he can request a copy which will be sent to him at no charge.

In cooperation with the University of Hawaii (Department of Agronomy), ARS is conducting a program to analyze the range and secondary coverage of tropical agricultural literature. Additionally, the study provides for the implementation of a computerized information dissemination program utilizing Biological Abstracts/BioResearch Index, Chemical Abstracts, CAIN, and Food Science and Technology Abstracts. This service has been in effect since September 1975.

ARS provides computer and technical support to individual USDA scientists who have bibliographic files for which data processing services are desired. This support includes, when necessary, the conversion of these files into machine-readable format. A directory of such files will be produced in 1976 and updated as needed. In addition to the *Directory of ARS-Authored Publications,* which includes all ARS-authored papers regardless of source, there are approximately 12 to 15 of these specialized reference files.

For further information, contact: Hilary D. Burton, Data Systems Application Division, Agricultural Research Service, Department of Agriculture, NAL Building, Beltsville, Maryland 20705, (301) 344-3817.

CURRENT RESEARCH INFORMATION SYSTEM

The Current Research Information System (CRIS) is a computerized data base that was established to serve as the documentation and reporting system for USDA research projects, and to provide technical information to research scientists and current and coordinated program planning information to research managers. CRIS became fully operational in 1969. Presently, CRIS contains 24,000 current or recently terminated research projects. All research sponsored or conducted by the following six USDA agencies must be documented in CRIS:

–Agricultural Research Service
–Cooperative State Research Service
–Economic Research Service
–Farmer Cooperative Service
–Forest Service
–Statistical Reporting Service

In addition, approximately 8,000 non-USDA-funded projects are provided voluntarily by 55 state agricultural experiment stations, 15 forestry schools, and 19 cooperating institutions.

In 1975, CRIS responded to 2,400 information requests. Three volumes of the *Inventory of Agricultural Research*, reflecting efforts in a variety of research categories (e.g., Commodity, Research Problem Area, Research Program), were produced and distributed for the eighth consecutive year.

CRIS STUDY

A joint Federal-state, in-depth study of CRIS was completed and published in 1975. In addition to confirming that CRIS was performing its assigned mission, it listed 22 recommendations for implementation to make the system more useful. Among the more important of these recommendations were:

- The costs of CRIS should be shared by USDA and the respective state institutions. Previously, the total costs of CRIS were met by assessment against the USDA research agencies.
- CRIS Work Unit/Projects should be structured to constitute an integral part of USDA's research management system.
- CRIS should determine the feasibility of an online capability for its own internal use. If successful, consideration should be given to the expansion of the online capability to include interested USDA agencies and state institutions.
- A high-level committee should consider how to make the CRIS classification scheme more flexible and more responsive to the needs of research managers in general, and of the national and regional planning committees in particular.
- A CRIS Operations Council should be established to work with the CRIS Director to make CRIS more useful to USDA and state users. The Council would consist of four USDA and four state representatives.

FOREIGN RESEARCH INVENTORIES

Preliminary talks were conducted with the research directors of OECD countries, concerning their collective interest in establishing a compatible procedure for the exchange of technical information about ongoing agricultural research.

FAO/EEC DISCUSSIONS

Talks were held with representatives of FAO (UN Food and Agricultural Organization) and EEC (European Common Market), to discuss the feasibility of exchanging technical data bases with CRIS. FAO has a system called CARIS, which, when operational, will document approximately 30,000 agricultural research projects conducted in the developing countries. EEC has a system called AGREP, which documents agricultural research being conducted by the Common Market countries.

COMPUTER OUTPUT MICROFILM

A COM file of the CRIS data base has been established for in-house use and has proven useful for special applications. Cumulative supplements are produced quarterly. Plans call for the discontinued project file of 20,000 projects to be stored on microfilm, along with selected data on funds and scientist/year, dating back to FY 1967.

ONLINE RETRIEVAL

An online technical data base has been established with a private contractor for CRIS' internal use. The system is in the final stage of development and will be operational in 1976.

REGULAR OPERATIONS

There have been significant improvements in the day-to-day operations of CRIS, particularly in regard to the timeliness of the indexing and the time required to process information requests. A major effort to review and update the vocabulary was completed. A number of special reports for the national and regional planning committees were produced.

For further information, contact: J.R. Myers, Director, Current Research Information System, Department of Agriculture, Room 6818, South Building, Washington, D.C. 20250, (202) 447-7273.

NAL DATA BASE ACTIVITIES

Dissemination of information about agricultural literature is a primary mission of the National Agricultural Library (NAL). Two software systems have been developed to control literature in this field. The major data base, CAIN (Cataloging and Indexing), currently contains bibliographic records for documents owned by the Library, including citations with abstracts for documents and audiovisuals collected by the Food and Nutrition Information Center at the Library. The second data base, STAR (Serial Titles Automated Records), contains detailed information on serial publications currently collected and indexed at NAL.

Computer terminals are used to generate the source data to be processed by CAIN and STAR. Cataloging information for CAIN is entered into and extracted from the OCLC (Ohio College Library Center) system through interactive terminals located at NAL. Indexing and STAR data is entered through CRT terminals online to local minicomputers. The CAIN bibliographic data base has been available in an online interactive mode for over two years through two commercial services: Lockheed Information Systems and System Development Corporation.

Efficient use of online equipment, including a knowledge of procedures and shortcuts as they apply to CAIN, requires systematic instruction. These and other closely related topics have been included in CAIN online training courses provided to USDA and land-grant university librarians. The need for a well-written and concise course manual was reflected in the numerous requests for assistance from commercial, land-grant, and other users of the online system. Such a manual, in the form of a user's guide, has been developed; it was tested in a small training session in December 1975. An instructor's manual with visual aids, lecture outlines, exercises, and examinations has also been prepared and tested.

Shortly after the CAIN file became available in an interactive mode from commercial vendors, eight land-grant university libraries were awarded grants, each in the amount of $3,500, to establish this new service (See *Federal Scientific and Technical Communication Activities: 1974 Progress Report*). These grants have given impetus to one of the most stimulating new services available to researchers and students. Bibliographic compilation virtually ceased in major research libraries some years ago because of the laborious, time-consuming, manual methods required. Online literature searching and its concomitant current-awareness citation services have put regular bibliographic alerting and compilation back into research libraries. The reestablishment of systematic and rapid searching has been cited as the most important aspect of online service at the land-grant universities.

NAL computer terminals are used to access such additional data bases as OCLC, MEDLINE, and TOXLINE (National Library of Medicine), JURIS (U.S. Department of Justice), and the New York Times Data Bank. Early in 1975, the goal of producing records for monographs and analytics through OCLC was achieved. Magnetic tape is received every two weeks from OCLC containing NAL cataloging records, which are converted for inclusion in the CAIN file. By April 1975, six terminals for OCLC activities were operational, two specifically dedicated to CONSER. Within two years, a large number of cataloging records for serials will be available online through OCLC. As part of this effort, NAL hopes to convert bibliographic data for serials from the STAR data base to the OCLC system, thus offering an opportunity for an online union list of serials. Use of the OCLC data base was expanded in 1975 to include pre-acquisition and interlibrary loan searching. Several different approaches are being used to extend OCLC access, on an experimental basis, to USDA field and NAL branch libraries.

NETWORKS

The basic regional structure of the document delivery system remained essentially the same as reported in the 1974 *Progress Report*, but was expanded to include seven additional states. By the end of 1975, the system included twenty states. The Southern Region (Texas) was expanded on July 1, 1975, to include Louisiana and, on October 1, 1975, New Mexico and Oklahoma. Service was begun in December 1975 in the North Central Region (North and South Dakota, Nebraska, Wisconsin, and Minnesota). A new Mountain Region was to be established in January 1976 which includes Colorado, Idaho, and Utah. This document delivery system has provided close regional working relationships and coordination of activities between USDA personnel and the land-grant libraries, and between the land-grant libraries themselves.

PACFORNET (Pacific Coast Forest Research Information Network) is a new system that provides technical information services to forestry professionals in four West Coast states: Washington, Oregon, California, and Hawaii. It is a personalized service, designed to help provide the latest scientific and technical literature to professionals in the many sciences related to forestry: forestry, chemistry, ecology, entomology, zoology, engineering, and others. It is not a traditional reference library in the sense that users visit a library to obtain books or periodicals, but a large information network with access to many technical libraries and other information sources across the country. Among the services provided are a *Monthly Alert*, listing new acquisitions among PACFORNET libraries; a general literature service providing users with materials pertinent to their professional work; literature searches, either manual or computerized; and reference services. PACFORNET services are available to specific forestry units in California, Hawaii, Washington, and Oregon.

NATIONAL RESOURCE COPIES OF AGRICULTURAL PUBLICATIONS

A major accomplishment in the microfilming of research publications has been achieved with the completion of the project as described in the *1974 Progress Report.* The New England Board of Education, in cooperation with NAL, microfilmed the state land-grant publications of six New England states on a shared-cost basis. Cooperating states are Connecticut, New Hampshire, Maine, Massachusetts, Rhode Island, and Vermont. Those New England documents filmed include those of the agricultural experiment stations, extension services, colleges of agriculture, forestry, and home economics. Prime emphasis was given to filming long serial runs of these organizational units from their inception through 1969. A total of 340,000 pages of publications for the New England states has been filmed, producing 182 rolls of film. However, not every title from the land-grant agricultural publications of these states has been filmed. In many cases, broken and difficult-to-complete sets were excluded. This New England project is part of a major undertaking, with the aim of microfilming the state agricultural publications of the entire United States over a period of several years.

For further information, contact: Information Officer, Office of the Director, National Agricultural Library, U.S. Department of Agriculture, Beltsville, Maryland 20705 (301) 344-3726.

DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

The Office of the Associate Director for Information Programs promotes the optimum dissemination of all scientific and technical information to the staff, sponsors, and customers of the National Bureau of Standards (NBS), and to the interested public. This includes coordination of the publication programs, international standards and programs, conferences and seminars, and special public relations activities. The management of the National Standard Reference Data System (NSRDS) also falls under this Office.

OFFICE OF TECHNICAL PUBLICATIONS

A comprehensive, flexible, and innovative publications program conveys the results of NBS work to the scientific, engineering, consumer, and business communities. About 41,000 pages of NBS-authored material were published during 1975 and appeared in the Bureau's 14 publication series, in its bibliographic subscription services, and in outside scientific and technological journals.

During the past decade, the total audience for the results of NBS studies has expanded in response to a growing recognition of the impact of measurement science on national objectives and programs. Scientists and engineers have been joined by members of the business community, educators, environmentalists, economists, safety experts, energy conservationists, consumers, and the general public. The Bureau's Consumer Information Series is primarily directed to the last two audiences. During 1975, this series, in cooperation with the Federal Energy Administration (FEA), featured a "how-to-conserve" energy publication directed to the homeowner. As the national authority on the metric system of measurement, NBS is serving as a major source of metric information for all sectors, from laymen to research scientists. Recent passage of Federal legislation authorizing a metric conversion program has further increased the demand for the Bureau's metric information. In addition to guidelines on the use of the International System of Units in scientific and technical publications, NBS has also published several metric guides for the layman and consumer, including a metric kit.

According to the Superintendent of Documents, the revenue generated by the annual sale of NBS publications last year was the largest in history. Responsible in part for the increased sales of NBS publications were some 89,000 inquiries handled by the Office of Technical Publications, including over 47,000 requests for metric information from members of Congress, industry, educators, students, and the general public.

Computer-assisted photocomposition continues to be developed as a means for retaining graphic-art quality while minimizing composition costs. During 1975, approximately 3,000 pages were prepared by this method. NBS continues to interface in this area with other Government agencies, making its knowledge available to them and, in turn, learning from them. In addition, the publications staff conducted orientation and training for NBS personnel to acquaint them with the procedures required for word-processing techniques and their potential for savings in both time and cost.

NBS uses the National Technical Information Service (NTIS) as the sole vendor of NBS Interagency Reports and for various specialized NBS bibliographic outputs. NTIS also serves as an archival resource to assure that out-of-print publications remain available to the public.

CENTRAL LIBRARY

One of the largest Federal collections of literature in the field of science and technology is contained in the NBS main library. In addition to the usual library materials, the library provides reference services and extensive literature search capabilities, both manual and computer-assisted. The library also acts as a referral service for public inquiries for information on specialized areas within NBS, about which it cannot directly supply that information. Separate collections within the library include literature on energy conservation and standard reference data on the physical and chemical properties of materials.

INSTITUTE FOR APPLIED TECHNOLOGY

Weights and Measures Information

The Office of Weights and Measures is a focal point for information on weights and measures laws, regulations, and technical requirements of Federal, state, and local governments. A library of historical and current documents and publications on weights and measures units, systems, and standards is maintained. A steady volume of weights and measures information and data are disseminated to government, industry, and consumers, covering such areas as the National Conference on Weights and Measures, Fair Packaging and Labeling Act, and commerical weighing and measuring devices and practices.

Engineering and Standards Information

NBS maintains a library reference collection of more than 200,000 U.S., foreign national, and international engineering standards. This library responds to requests for information on the source and availability of standards, analyzes selected standards and the impact of standardization, and compiles general and special indexes of standards. NBS is now investigating the feasibility of an online computer system for the retrieval of standrds information.

Metric Information

A Metric Information Office was established as a follow-up to the U.S. Metric Study, completed in 1971. The Office serves as the principal focal point in the Federal Government for inquiries related to the metric system, metric conversion, and the U.S. Metric Study. Informational resources related to these topics have been developed, and packets of these materials are provided to interested persons in business, education, and the general public. A National Metric Speakers Bureau has been established to provide speakers on metric conversion to groups of all types in all sectors of the United States. Interest in all of these activities has been greatly stimulated by the enactment of the Metric Conversion Act of 1975.

Consumer Product Information

The Center for Consumer Product Technology has established three Consumer Sounding Boards in the Washington metropolitan area. These Boards are sponsored jointly by the Center and the USDA County Extension Services. The Boards consist of a cross-section of county citizens and were established to assist standards-developing groups in obtaining consumer input to the voluntary standards-making process. The Center, representing NBS, is cooperating with four other groups–American National Standards Institute, American Society for Testing and Materials (ASTM), Underwriters Laboratories, and the National Fire Protection Association–in establishing a network of Sounding Boards throughout the nation. The Consumer Product Safety Commission has recently made available a $100,000 grant to assist in this effort.

Building Research Information

The Center for Building Technology (CBT) has developed three companion reports on its programs, activities, and outputs. They are NBS Special Publication 439, *Center for Building Technology–A Perspective*; NBS List of Publications 57, *CBT List of Publications*; and NBS Special Publication, *CBT Project Summaries.* The reports describe, respectively, CBT's major programs and laboratory facilities CBT-published reports (from 1964 to 1975), and CBT projects for Fiscal Years (FY) 1975 and 1976. These documents are being made available to members of the building community.

The Center for Building Technology has assembled a recently computerized mailing list of members of the building community. As a result, newsletters, press releases, and other topical information, including the above three reports, are now mailed more quickly and more efficiently to recipients. Finally, the Center maintains an information service activity, aided by a limited inventory of Center-published documents and a system of referral to appropriate places for report acquisitions, e.g., the Government Printing Office and NTIS.

Fire Research Information

NBS operates one of the few libraries exclusively devoted to the special field of fire research. The library supports fire research and development efforts by providing searches of current and past fire literature, bibliographic compilations, and information dissemination services. Under contract to NASA, the library prepares selected documents to be included in the Fire Safety Data Bank of the Aerospace Research Institute. This acitivity provides wide dissemination of information which may be useful to the aerospace program, and which benefits the Center for Fire Research and the fire-fighting community at large.

For additional information, contact: Dr. E.L. Brady, Associate Director for Information Programs, National Bureau of Standards, Department of Commerce, Admin. A935, Washington, D.C. 20234, (310) 921-3641.

NATIONAL STANDARD REFERENCE DATA SYSTEM

The formal existence of the National Standard Reference Data System (NSRDS) dates from 1963, when the Federal Council for Science and Technology asked NBS to assume primary responsibility in the Federal

Government for promoting and coordinating the critical evaluation of numerical data in the physical sciences. The program was conceived as a decentralized national effort, with financial support coming from a variety of Government and private sources, but with NBS responsible for the overall planning and coordination. The existing data compilation activities supported by NBS and other Government agencies were to be strengthened, new projects started in neglected technical areas, and the entire effort molded into a coherent program.

In responding to that request, the National Bureau of Standards set up the Office of Standard Reference Data (OSRD), which functions in a general way as a focal point and a central coordinating force for a broad range of data activities, both in the Government and under private sponsorship. The primary aim of this program is to provide critically evaluated numerical data, in a convenient and accessible form, to the scientific and technical community of the United States. A second aim is to advance the level of experimental measurements by providing feedback on sources of error in various measurement techniques. Through both of these objectives, the program strives to increase the effectivness and productivity of research, development, and engineering design.

As a government-wide program with many components deriving from and responding to differing agency needs, NSRDS encompasses a wide variety of specific project activities. Some of these, which are most explicitly geared to individual mission objectives and which are support by the individual agencies, are more appropriately discussed elsewhere in this *Progress Report*, in sections submitted by the respective agencies. Other, more widely applicable, undertakings are sponsored and managed (wholly or cooperatively) by NBS/OSRD, in the interest of the entire technical user community. It is this latter component of NSRDS which will be described here.

The technical scope of the NSRDS program is restricted to well-defined physical and chemical properties of substances and systems which are well-characterized. While this definition leaves some borderline cases, the intent is to concentrate the effort on intrinsic properties which are clearly defined in terms of accepted physical theory. Properties which depend upon arbitrarily defined characteristics of the measurement technique are generally excluded, as are materials of uncertain or variable composition. Biological properties and data relating to large natural systems (e.g., the atmosphere, the oceans) also lie outside the scope of the program.

The principal output of the NSRDS program consists of compilations of evaluated data, and critical reviews of the status of data, in specific technical areas. Data evaluation involves a careful examination, by an experienced specialist, of all published measurements of quantity in question, leading to the selection of a recommended value with an accompanying statement concerning its accuracy or reliability. The techniques of evaluation depend upon the data in question, but generally include an examination of the method of measurement and the characterization of the materials, a comparison with relevant data on other properties and materials, and a check for consistency with theoretical relationships. Adequate documentation is provided for the selections of recommended values and estimates of accuracy. Evaluated data produced under the NSRDS program are disseminated through the following mechanisms:

- *Journal of Physical and Chemical Reference Data*—A quarterly journal containing data compilations and critical data reviews, published for NBS by the American Institute of Physics and the American Chemical Society. This journal is now in its fifth year of publication.
- NSRDS-NBS Series—A publication series distributed by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. This series, while partially replaced by the *Journal of Physical and Chemical Reference Data* as the primary output channel for NSRDS, remains an important publication category.
- Appropriate publications of technical societies and commercial publishers.
- Response by OSRD and individual data centers to inquiries for specific data.

While NSRDS and its publications emphasize the preparation of data compilations on highly specialized topics in thermodynamics, atomic and molecular spectroscopy, chemical kinetics, crystallography, etc., these outputs find application to current problems of national concern. In recognition of this fact, OSRD has recently reorganized its internal program management structure along application-defined lines. Replacing the previous seven, discipline-derived, programs are four broad categories:

- Energy and Environmental Data
- Industrial Process Data
- Materials Utilization Data
- Physical Science Data

During the past year, OSRD continued its close contact with data compilation activities abroad. Both liaison and program discussions help avoid needless duplicaton of effort, and encourage better overall coverage of important technical areas. The Office is also active in CODATA, the Committee on Data for Science and Technology of the International Council of Scientific Unions.

Specific features of the NSRDS program during 1975 include the following:

(1) Systematic cooperative planning with representatives of U.S. industry for meeting important data needs, and active growth of jointly sponsored data evaluation projects. A five-year project on the

thermodynamic properties of ethylene is well under way. The second phase has been started on a project to provide reliable data for incinerator design.

(2) Interagency focus on data needs for water pollution abatement, featuring a meeting sponsored by the National Academy of Sciences Numerical Data Advisory Board to define data needs, and plans for a symposium in 1976.

(3) The appearance of the first of a series, *Critical Surveys of Data Sources. Metals*, which are intended to evaluate data resources on selected materials.

(4) The release of three data compilations in magnetic tape format for direct searching by the purchaser. The three collections cover mass spectral data, crystal data, and atomic spectral line intensities.

(5) Continuing binational and multinational cooperative data projects, including a substantial effort under the US/USSR Scientific and Technical Exchange Program.

For further information contact: Dr. David R. Lide, Jr., Office of Standard Reference Data, National Bureau of Standards, Department of Commerce, Washington, D.C. 20234, (301) 921-2467.

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY

Computer Information

A specialized computer information center is operated which provides consulting, advisory, and staff support services. It also maintains a repository of documentation on automatic data processing (ADP) systems design and applications, and includes specifics on hardware, software, standards, services and related disciplines. These holdings have been expanding by an average of 5,500 national and international information items annually, and reflect the broadening NSB activities in both technical and socioeconomic programs. Bibliographic data elements describing the information items have been identified and keyboarded into the CHAOTIC (Computer and Human-Assisted Organization of a Technical Information Center) information management system. Computer processing of this system produces a set of indexes for search aids; e.g., Keyword-Out-of-Title (KWOT), personal author, corporative author, contract number, and bibliographic listing by shelf number. An archival copy of the magnetic tape files that are generated is maintained for subsequent online search and retrieval of the bibliographic data.

ADP Standards Development and Publications

As part of its activities in meeting the responsibilities assigned by Public Law 89-306, the Office of ADP Standards Management has sponsored the development of, and has issued, the following Federal Information Processing Standards Publications (FIPS PUBS) to date:

FIPS No.	
0	General Description of the Federal Information Processing Standards Register
1	Code for Information Interchange
2	Perforated Tape Code for Information Interchange
3-1	Recorded Magnetic Tape for Information Interchange (800 CPI, NRZI)
4	Calendar Date
5-1	States and Outlying Areas of the United States
6-2	Counties and County Equivalents of the States of the United States
7	Implementation of the Code for Information Interchange
8-4	Standard Metropolitan Statistical Areas
9	Congressional Districts of the United States
10-1	Countries, Dependencies, and Areas of Special Sovereignty
11	Vocabulary for Information Processing
12-2	Federal Information Processing Standards Index
13	Rectangular Holes in Twelve-Row Punched Cards
14	Hollerith Punched Card Code
15	Subsets of the Standard Code for Information Interchange
16	Bit Sequencing of the Code for Information Interchange in Serial-By-Bit Data Transmission
17	Character Structure and Character Parity Sense for Serial-By-Bit Data Communication in the Code for Information Interchange
18	Character Structure and Character Parity Sense for Parallel-By-Bit Data Communication in the Code for Information Interchange
19	Guidelines for Registering Data Codes
20	Guidelines for Describing Information Interchange Formats
21	Common Business Oriented Language (COBOL)
22	Synchronous Signaling Rates Between Data Terminal and Data Communication Equipment
23	Objectives and Requirements of the Federal Information Processing Standards Program

24 Flowchart Symbols and Their Usage in Information Processing
25 Recorded Magnetic Tape for Information Interchange (1600 CPI, Phase Encoded)
26 One-Inch Perforated Paper Tape for Information Interchange
27 Take-Up Reels for One-Inch Perforated Tape for Information Interchange
28 Standardization of Data Elements and Representations
29 Interpretation Procedures for Federal Standard COBOL
30 Software Summary for Describing Computer Programs and Automated Data Systesm
31 Guidelines for Automatic Data Processing, Physical Security, and Risk Management
32 Optical Character Recognition (OCR) Character Sets
33 Character Set for Handprinting
34 Guide for Use of International Systems of Units (SI) in FIPS
35 Code Extension Techniques in 7 or 8 Bits
36 Graphic Representation of Control Characters of ASCII
37 Synchronous High Speed Data Signaling Rates Between Data Terminal Equipment and Data Communications Equipment
41 Computer Security Guidelines for Implementing Privacy Act of 1974
42 Guidelines for Benchmarking ADP Systems in the Competitive Procurement Environment
43 Aids for COBOL Program Conversion (FIPS PUB 21 to FIPS PUB 21-1)

For further information, contact: Dr. Ruth M. Davis, Director, Institute for Computer Sciences and Technology, National Bureau of Standards, Department of Commerce, Washington, D.C. 20234, (301) 921-3151.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The National Oceanic and Atmospheric Administration (NOAA) is composed of six Major Line Components. These include:

(1) the Environmental Data Service
(2) the National Environmental Satellite Service
(3) the National Marine Fisheries Service
(4) the National Ocean Survey
(5) the National Weather Service
(6) the Environmental Research Laboratories

ENVIRONMENTAL DATA SERVICE

The primary mission of the Environmental Data Service (EDS) is to disseminate worldwide environmental data, data products, and technical literature and information resulting from scientific, technological, and research activities. To effect this dissemination, EDS is a party to many cooperative national and international exchange efforts. Nationally, these include bilateral, interagency agreements with USDA, the Department of the Interior, the Department of Transportation (DOT), NASA, the National Science Foundation (NSF), and the U.S. Navy, among others.

The EDS Center for Climatic and Environmental Assessment (CCEA) supplies each state with a base graph showing the normal 30-year curve of accumulated cold weather in that state throughout the heating season, with accompanying curves showing the extremes of cold and warm weather that have occurred on an average of once every 10 years in the state. Each Wednesday, the National Weather Service provides observed and forecast weather information to be compared with those curves. The information provided is weighted by population so that, for example, cold weather reports from a large city, where heating needs will be great, will weigh more heavily in the statistics than equally cold weather in a sparsely populated region of the state. The data provide warnings sufficiently in advance to make fuel distribution adjustments possible with a minimum of hardship.

EDS has established a Deepwater Ports Project Office to meet requirements placed upon NOAA by the Deepwater Port (DWP) Act of 1974, which establishes procedures for the location, construction, and operation of deepwater ports off the coasts of the United States. The Act invests licensing authority in the Secretary of Transportation, while the Administrator of NOAA is called upon to provide essential support. To meet NOAA's obligation, the EDS Project Office reviews, evaluates, and prepares recommendations for the Administrator on DWP license applications, related environmental impact statements, and adjacent coastal state status.

To establish an effective dialogue with the user community, EDS conducts workshops with R&D planners and managers in state and local government agencies, often in conjunction with other Federal agencies (e.g., ERDA and NSF). The major objectives of such meetings are to identify environmental data and information products and services available from Federal sources, and determine specific user requirements for this material. One of the major items stressed in the workshops is the availability of scientific and technological research and development studies through the NOAA libraries. The EDS Environmental Science Information Center manages to provide functional guidance for these libraries, and is also responsible for the processing and editing of all of NOAA's scientific and technical papers, including research and development results.

EDS has responded to the needs of the Department of Interior's Bureau of Land Management (BLM) for R&D baseline data and data management support related to the development of oil and gas resources on the Outer Continental Shelf. Through the Oceanic and Atmospheric Scientific Information System (OASIS), EDS's program for computerized information retrieval services, extensive organized bibliographic search support services were provided to research scientists in the Alaskan Outer Continental Shelf Environmental Assessment Program funded by BLM. In addition, EDS disseminates results, data, and information from research programs of other Federal agencies such as the International Decade of Ocean Exploration (NSF), Ocean Dumpsite Evaluation (EPA), and Deep Ocean Mining Environmental Studies (NOAA Environmental Research Laboratories), to the national and international scientific and engineering communities.

As another aspect of the OASIS programs, two major bibliographic data bases, Oceanic Abstracts and Meteorological and Geoastrophysical Abstracts, were automated on a nationwide retrieval network (DIALOG), which is operated by Lockheed Information Systems. This automation activity took place through a NOAA contract with Lockheed. The data bases are now available for online searching by the total scientific and technical information/science community.

In a joint program among NOAA, EPA, and the U.S. Patent and Trademark Office, a Union List of Serials was published, representing approximately 12,000 titles in 30 libraries. This facilitates interagency sharing of this valuable type of information.

For several years, EDS's Environmental Science Information Center (ESIC) has been building a machine-readable data base of its library cataloging records, first through a contract with Inforonics, Inc. and subsequently through the use of the Ohio College Library Center (OCLC). During 1975, ESIC sponsored the merging of these two data bases in order to produce a book catalog of holdings of Washington-area NOAA libraries. A significant aspect of the experiment is the opportunity to identify problem areas in merging compatible data bases.

In international activities, U.S. and Canadian environmental agencies have begun talks aimed at more effective sharing of their environmental scientific and technical information and data. In late May 1975, a conference was held in Washington attended by 50 representatives from NOAA, Environment Canada, and EPA. The groundwork was laid for continuing international talks to define more formal guidelines for an effective exchange. The proceedings have been published as the *Proceedings of the International Environmental Information Workshop*, U.S. Dept. of Commerce, Washington, D.C., May 28-30, 1975, (January, 1976).

ESIC became the depository for publications of the Intergovernmental Oceanographic Commission and the International Council for the Exploration of the Seas. ESIC will collect and announce these documents for the benefit of the marine science community.

During 1975, ESIC continued and increased its activity as the U.S. participant in the Aquatic Sciences and Fisheries Information System (ASFIS). Dr. Joseph F. Caponio was elected Chairman of the meeting of the Joint Group of Experts on ASFIS, which was convened by the United Nations Food and Agriculture Organization (FAO) and the UNESCO Intergovernmental Oceanographic Commission (IOC). Under the Chairmanship of Robert R. Freeman, the Advisory Board of Aquatic Sciences and Fisheries Abstracts (ASFA) met in Washington, D.C. An experimental computer-searchable data base is now being produced in addition to the ASFA publication.

ESIC provided abstracts of over 1,500 papers relating to studies on the aquatic environment for inclusion in *Aquatic Sciences and Fisheries Abstracts*, a monthly publication compiled by the FAO with the aid of collaborating partners. As the U.S. member, ESIC is one of nine participating organizations. The scope of the publication includes the aquatic environment, including physical and chemical aspects, pollution, resource utilization (particularly fisheries), and the biology of aquatic organisms.

NATIONAL ENVIRONMENTAL SATELLITE SERVICE

The National Environmental Satellite Service (NESS) assumed operational control of two satellites in the Geostationary Operational Environmental Satellite (GOES) series. These were NASA's SMS-2, the second prototype, and GOES-1, the first NOAA operational satellite. These satellites relayed to a ground station, for further relay to operational users, cloud pictures of the earth and environmental data sensed from remote platforms. Satellite Field Services Stations were established at Honolulu, Hawaii, and Anchorage, Alaska, to receive, analyze, and interpret satellite data on a regional basis. NOAA-4 continued as the operational polar-orbiting satellite, providing complete earth coverage of environmental conditions twice daily. Work continued on the development of the new TIROS-N-series satellites. This series will be the replacement for today's polar-orbiting satellites.

NATIONAL MARINE FISHERIES SERVICE

The National Marine Fisheries Service (NMFS) plans, develops, and manages research programs to better understand living marine resources and the environmental quality essential for their existence, and to describe options for their utilization. This mission requires the coordination of the efforts of the individual NMFS components, as well as the maintenance of communication and information and data services among various federal and state agencies and private organizations.

An example of ongoing cooperative research and communication is an ERTS-Follow-on experiment from two previously completed studies, which demonstrated the relationship between aircraft/spacecraft remotely sensed environmental data and the distribution of fish. Initial analysis of a portion of the field data from the LANDSAT-Follow-on experiment, in which NMFS, NASA, and the fishing industry participated jointly, has been completed. This analysis seems to confirm the original LANDSAT hypothesis that zones of menhaden concentration can be identified and delineated from Multi-Spectral Scanner data.

Other examples of ongoing cooperative research and communication are:

(1) NMFS, NESS, NASA, and the Coast Guard are cooperating in a study to determine the feasibility of using airborne and satellite radars to locate and identify fishing vessels.

(2) Multination cooperative assessments of fish stocks, using hydroacoustic techniques, are being coordinated in the Northeast Pacific by the Northwest Fisheries Center and in the Northwest Atlantic Center.

(3) A cooperative hydroacoustic survey of northern anchovy stocks, involving research vessels from the State of California, Mexico, and the United States (Southeast Fisheries Center), is planned for the spring of 1976.

NATIONAL OCEAN SURVEY

A Chart Automation Projects Office of the National Ocean Survey (NOS) was established to develop, implement, and complete the NOS transition to a computer-assisted cartographic system for the production of marine data, nautical and aeronautical charting, and for automated interface with the FAA National Flight Data Center.

Geodetic activities were highlighted with the initiation of the New Adjustment of the North American Horizontal Datum. As an eight-year program begun in 1975, the adjustment will culminate in the publications of new horizontal control data for the entire United States control network and nets in Canada, Mexico, Greenland, and the Central American republics. A new national geodetic data base is being designed to store and retrieve the enormous volume of computer-readable data now held by other government agencies.

Oceanographic programs included the completion of the tide and tidal current survey of Cook Inlet, Alaska. Originally proposed as a five-year project, it was completed in three years. This is attributed to the outstanding performance of the Aanderaa Current Survey System and the capability and organization of the NOAA Ship, U.S.S. McArthur. An Environmental Project Office was established to coordinate all environmental assessment and monitoring activities within NOS. A new chart numbering system, developed in cooperation with the Defense Mapping Agency Hydrographic Center (DMHAC), was initiated to bring all United States nautical charts (DMAHC- and NOS-produced) under a unified national system.

In aeronautical charting, NOS lengthened the airspace amendment cycle from 28 to 56 days. Instrument charts which had been produced and issued on a 28-day cycle are now being issued on a 56-day cycle, reducing the costs of reproduction and administrative handling.

The delivery and predeployment test of the Prototype Environmental Buoy (PEB) was the culmination of five years work in the development of deep ocean moored buoys which will automatically supply environmental data for improved weather forecasting. An additional five PEB's are under contract for delivery in Fiscal Year 1976. These are the first in a series of operational buoys to be deployed off the coasts of the United States and Canada in support of requirements of the National Weather Service.

The Offshore Tide Telemetering System (OTTS) design and development was completed, and is presently undergoing field tests. The system provides for the telemetry of real-time tidal data from offshore buoys to a survey vessel. The development and testing of the on-board processing and software for the Sea Scan System was completed. The software will be incorporated into an expanded Underway Water Sampling Program that will measure the impact of energy-related operations on the marine environment. In addition to water quality parameters, the systems will measure currents and the optical properties and petroleum hydrocarbon content of the sea water while the surveying vessel is underway.

NATIONAL WEATHER SERVICE

Applied research and development are designed to contribute to improvement in the operations, products, and services of the National Weather Service (NWS). Activities are conducted in two main areas: equipment systems and forecast techniques.

In the area of equipment systems, Automation of Field Operations and Services (AFOS) activities focused on the development of specifications and initiation of procurement of the first field system. Design of AFOS interfaces was completed for the National Hurricane and National Climatic Centers. Significant progress was made in design work for the remaining national centers and the Real Time Monitoring and Control Center. The development of Automatic Meteorological Observing Stations was directed toward add-on modules for [illegible] scatter visibility, sky condition using a rotating beam ceilometer, and a manual entry and display device.

During 1975, the NWS designed a new 35-station solar radiation-measuring network. All stations in the network will measure total radiation, several will also measure indirect radiation and a few will measure direct radiation. Most equipment has been purchased. Delivery and installation in 1976 will allow network operation to begin in early 1977. ERDA funds are being combined with NOAA funds and personnel to design and implement this advanced network.

NWS participated in the Fifth International Pyrheliometric Comparison at Davos, Switzerland. These comparisons provide the means to standardize the solar energy measuring instruments of all nations. Data from the comparisons are used to maintain the U.S. standard instruments and to verify network data integrity.

The National Meteorological Center directed a major portion of its R&D effort in the application of computers for operational weather forecasting. Mathematical models based on the governing physical principles of atmospheric behavior have been developed which resolve smaller scales than previously attempted operationally. Improved forecast guidance for operational short-range forecasting (to 36 hours) was obtained in 1975 through this type of modeling development effort. Application was also directed at the operational problem of hurricane-forcasting. The results of the first testing made in real time during the 1975 hurricane season warrant a vigorous pursuit in order to increase forecasting accuracy of the hurricane motion and associated precipitation for North American coastal regions.

In the area of forecast technique development, emphasis was placed on public weather prediction, severe local storms, marine environmental prediction, and local applications for AFOS. For public weather, model output statistics (MOS) were used to produce improved operational forecasts of temperature, wind, cloud amount, and precipitation. For severe local storms, both short and medium range forecasts were improved and disseminated; development of an atmospheric boundary layer model continued. For marine applications, methods of predicting hurricane storm surge were improved and beach erosion and oil spill concentration studies were started. For local applications, a system for automatically monitoring and updating aviation forecasts was nearly completed.

In the area of river forecasting, mathematical models of hydrologic processes, known as the National Weather Service River Forecast System (NWSRFS), have been incorporated in the NOAA computer at Suitland, Md., for use through remote terminals by River Forecast Centers (RFC's) throughout the United States. Techniques have also been developed to acquire rapid information on the water equivalent of snow cover to aid in more timely and accurate flood warnings and forecasts. Nearly 10% of the river and rainfall observing network is automated for rapid acquisition of data via the new Automatic Hydrologic Observing System (AHOS).

For further information regarding NOAA, contact: Dr. Joseph F. Caponio, Director, Environmental Science Information Center, Environmental Data Service, National Oceanic and Atmospheric Administration, Department of Commerce, Washington, D.C. 20235, (202) 634-7399.

NATIONAL TECHNICAL INFORMATION SERVICE

The National Technical Information Service (NTIS) is the central source for the public sale of Government-sponsored research, development, and engineering reports and other analyses prepared by Federal agencies, by their contractors and grantees, or by Special Technology Groups. NTIS is also a central source for Federally-generated, machine-processable data files. The NTIS collections of documents, which exceeds 900,000 titles, covers a full range of subjects, including physical, life, and social sciences. NTIS is obligated, under Title 15 of the U.S. Code, to recover its costs from the production and sale of its information products and services.

The NTIS customer base includes small businesses; large corporations; Federal, state, and local governments; special libraries; individual consultants, scientists and engineers; and the general public. About four million documents and microforms were distributed to this user community during 1975.

A full range of products and services are available to customers as subscriptions, standing orders, specialized packaging, and demand orders. This continuous and timely flow of scientific and technical information is ensured by agreements between NTIS and hundreds of Federal research-sponsoring organizations and Special Technology Groups.

USER PRODUCTS AND SERVICES

Documents

NTIS-reproduced research reports are available in paper copy, microform, and magnetic tape. All accessioned documents are permanently available.

Subscriptions

Summaries of research reports and other specialized information are published in 26 categories of interest as weekly newsletters (*Weekly Government Abstracts*). An all-inclusive biweekly journal (*Government Reports Announcement & Index*) is published for those requiring all subject categories in a single volume, with an accompanying index.

Standing Order Microfiche Service

Selected Research in Microfiche (SRIM) automatically provides subscribers with the full texts of research reports specially selected to satisfy individual requirements.

Computer Search Service

NTISearch, NTIS' online computer search service, provides customers with summaries of special interest from among 450,000 research reports published from 1964 to the present. Published NTISearches, completed in response to previous demand, are also available in various subject categories. Over 1,000 titles are listed.

Special Technology

NTIS is the marketing coordinator for the publications, technical inquiries, and special analyses of Special Technology Groups and Information Analysis Centers (IACs).

INNOVATIONS OF 1975

New Sources of Information

NTIS' legislative charge to collect "from whatever sources, foreign or domestic, that may be available" stimulated the consummation, during 1975, of major agreements with the National Health Planning Information Center (NHPIC), Department of Health, Education and Welfare (HEW), and two British organizations, Engineering Sciences Data Unit (ESDU) and Technical Help to Exporters (THE).

The General Services Administration (GSA) has selected NTIS to organize and manage a Federal Software Exchange Center. NTIS will catalog and index the software items, announce them and provide copies.

Product Development

The *Weekly Government Abstracts* (*WGA*) newsletters, NTIS' primary product, promoted to attract new customers, was expanded to include 26 different categories. The most recent additions were *Health Planning* and *Problem Solving Information for State and Local Governments* (first edition, January 5, 1976).

In 1975, NTIS added to its subscription products in energy and energy-related categories. NTIS now offers the Federal Energy Administration's *Monthly Energy Review, Monthly Petroleum Statistics Report, Quarterly Energy Information Reported to Congress,* and NASA's *Quarterly Energy Bibliography.*

New Services.

Three workshops were offered in 1975 by City University of New York (CUNY) and NTIS to provide librarians and other information specialists with refresher training. The course structure and related instructional material were designed and developed by NTIS, with emphasis placed on the information resources of NTIS.

NTIS and New York Management Center, Inc., entered into an experimental agreement to cooperatively develop, prepare, and present a series of seminars and conferences covering subjects in areas in which NTIS has significant research information.

Promotion and Market Development

After an intensive period of market development and customer-base expansion, lasting several years, NTIS marketing strategies were directed towards greater satisfaction of customers and encouraging their increased utilization of NTIS products. Program activities included trials of new promotion techniques, such as telephone marketing, bookmobile displays on college campuses, and telegrams.

NTIS-AID Program

NTIS now has cooperative agreements with national organizations in Colombia, Ecuador, Guatemala, Korea, Nigeria, Pakistan, Thailand, and the Philippines. The agreement with Guatemala actually encompasses a network of organizations in Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. The central thrust of the program is to assist technology transfer organizations in Third World Countries in developing information-marketing techniques, and thus to enhance their effectiveness.

Magnetic Tape Library

A new Magnetic Tape Library was completed in the spring of 1975. It is to provide needed support for the NTIS Computer Center, as well as for the Federal Software Exchange Center. The new facility now has more than 10,000 magnetic tapes on file, and provides storage space to expand the total number of tapes under control to more than 20,000, under exacting standards of cleanliness and fire protection.

A Second Mini-Computer System

In September 1975, NTIS installed a second Four Phase System mini-computer, supplementing the one installed late in 1974. All keyboarding functions within the Input Processing Division now employ this equipment. This fully controlled system provides NTIS with the capability to increase input workloads without increasing costs.

Computer Output Microfilm

NTIS continued to expand its use of Computer Output Microfilm (COM) applications in 1975. COM-produced files of orders are the basic tool for NTIS customer-service and management information, and are updated weekly. NTIS anticipates that all of its master subscription files will be converted to COM during 1976. NTIS is producing COM at the annual rate of more than five million frames (pages). (To produce this information in the equivalent hard copy printout would require more than 200 days with a printer operating 24 hours per day).

Interaction with State and Local Governments

The increased need of state and local governments for utilization of Federally generated information (including techniques) for improving productivity and the quality of life, and increasing economic growth, has stimulated an NTIS program that is designed to explore new ways in which NTIS could contribute to meeting this need. Endorsement of a larger NTIS role was given by the National Governors' Conference, the International City Management Association, the National Conference of Mayors, and the National Conference of State Legislatures.

Government Patent Program

For the past two years, NTIS has been developing a program responsive to the need expressed by the Government Patent Policy Committee for the exploitation of Government-owned patents to foster the domestic economy.

Government-owned inventions are now available to entrepreneurs, generally through royalty-free, non-exclusive licenses.

In late 1974, NTIS, together with the U.S. Navy's Naval Ship Research and Development Center (NSRDC), sponsored a conference on a new NSRDC-developed antifouling ship bottom paint. The conference resulted in the issuance of licenses on the invention to U.S. manufacturers.

A similar conference on bio-medical inventions from six Federal agencies was held at the National Institutes of Health (NIH) in November 1975. Licensing requests are now being received from this seminar.

For further information, contact: William T. Knox, Director, National Technical Information Service, Department of Commerce, Suite #620, 425 13th Street, N.W., Washington, D.C. 20004, (202) 724-3374.

OFFICE OF TELECOMMUNICATIONS

The mission of the Office of Telecommunications (OT) is to assist the Department of Commerce in fostering, serving, and promoting America's economic development and technological advancement by: (1) improving man's comprehension of telecommunication science, and (2) assuring the effective use and growth of America's telecommunications resources. Results of OT's work are made available to the public through technical reports, special reports, brochures, and TV films.

SIGNIFICANT EVENTS OF 1975

To help Federal Government policymakers cope with the variety of problems arising from the increased use of radio paging systems in urban areas, OT performed and monitored a series of studies dealing with such topics as regulatory problems, costs, demand, present technological achievements, and the geographical distribution of paging use over the next decade.

In the area of energy conservation, the staff prepared a major report, *Telecommunications Substitutability for Travel: An Energy Conservation Potential.* OT also helped private industry prepare three short films on this general theme, all of which have been well received.

As part of its extensive support program for Government management of the electromagnetic spectrum, OT paid special attention to the problems of four major bandwidths: 7.27 to 8.4 gigahertz; and 960-1300, 2700-2900, and 4990-5250 megahertz (1.0 gigahertz equals 1000 megahertz).

JOINT PROGRAMS WITH OTHER AGENCIES

Office researchers completed a project of testing aircraft collision avoidance systems for the FAA. The project involved the evaluation of the compatibility of proposed systems with other spectrum users.

OT conducted tests relevant to the implementation of a pilot microwave digital communication system in West Germany and northern Italy. The testing program was sponsored by the Electronic Systems Division of the USAF Systems Command.

OT published a detailed reference document, *The World's Submarine Telephone Cable Systems.* The document represents a major compilation of sea cable cost, ownership, and technical data. It was prepared under an OT contract in support of the President's Office of Telecommunications Policy.

Office analysts, working in cooperation with the Federal Telecommunications Standards Committee of the National Communications Systems, studied in depth the problems presented by the particular criteria used to assess the performance of data communications systems facilities. OT submitted a comment on this issue to the Federal Communications Commission.

The Office, working in concert with NOAA, constructed a radar facility on San Clemente Island, Cal. The facility is designed to have an effective range of 2,500 miles and is intended to monitor wind and wave conditions in the Gulf of Alaska.

OT continued its study of the use of radar-activated braking systems for automobiles. The study, which is now in its second phase, is being conducted for the Department of Transportation.

NEW AND CONTINUING PROGRAMS WITH INTERNATIONAL ORGANIZATIONS AND FOREIGN COUNTRIES

OT continued its participation in the activities of the Organization for Economic Cooperation and Development (OECD). In 1975, OECD sponsored a conference on Computer-Telecommunications Policy that attracted 230 representatives from 24 member nations. OT took part in planning the agenda, chaired one panel, and participated in other panels.

OT made important contributions to the work of the International Telecommunications Union (ITU), a UN agency. Staff members participated in the many special study groups—both the U.S. groups and their international equivalents—of the ITU's International Radio Consultative Committee. Working through an *ad hoc* committee of the Interdepartment Radio Advisory Committee, the Office also continued its preparatory work for the 1979 ITU World Administrative Radio Conference.

For further information, contact: Lois Adams, Public Information Officer, Office of Telecommunications, Department of Commerce, Washington, D.C. 20230, (202) 967-5578.

U.S. PATENT AND TRADEMARK OFFICE

The chief activity of the U.S. Patent and Trademark Office is the examination of patent applications and the granting of patents for inventions which satisfy the statutory criteria. In addition, the Patent Office publishes and disseminates patent information, maintains search files of U.S. foreign patents, maintains a scientific library and a public search room, supplies copies of patents and related official documents to the public, and periodically publishes technology assessment and forecast reports.

One of the important reasons for having a patent system is to inform the public of inventions which might not otherwise be disclosed. For the system to be effective as a source of technical information, it must be possible for people to locate patent documents on subjects of interest to them without too much effort. In the United States (as elsewhere), the volume of patent literature in existence is continuing to expand dramatically. More than 4 million U.S. patents have been issued. Because the patent search files contain more than one copy of most patents, due to cross-referencing, there are now approximately 11 million copies of U.S. patents in the files, and about 9 million foreign patents and other technical documents. Approximately 250,000 U.S. patent documents are added to the files annually. A substantial amount of Patent Office activity is devoted to making this patent literature available to the public.

OFFICIAL GAZETTE

One of the most effective means of dissemination of patent information to the public is the *Official Gazette*. The *Gazette* contains a summary of each of the approximately 1,600 patents granted weekly; the summary includes a drawing and a patent claim describing the invention. The *Gazette* is arranged according to class and subclass of subject matter. If an individual is interested in the complete patent specification, copies of the pertinent patent may be ordered. The *Official Gazette* is available on a subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. It is also available in more than 500 libraries throughout the U.S.

COPIES OF PATENTS

The Patent Office distributes 22,000 copies of patents daily; this distribution is on a worldwide basis. Five million copies of patents are sold annually, at $0.50 per copy. In addition, the Patent Office provides copies to foreign patent offices under exchange agreements, and to libraries at nominal cost. Subscriptions are available for copies of all patents issued in a specific subclass. Patent copies may be obtained from the U.S. Patent and Trademark Office, Washington, D.C. 20231.

PUBLIC SEARCH ROOM

A public search room is maintained at the Patent Office, to enable the public to conduct investigations of the patent literature. Employees are available to explain how patent searches may be conducted. The search room contains paper copies of all U.S. patents, arranged according to subject matter in the U.S. classification system (the classification system contains more than 300 classes and 90,000 subclasses). There is a second set of patents in the search room, arranged in numerical order. The numerically sequenced set of patents is on 16-mm microfilm cartridges. Microfilm readers are available in the search room which will produce paper photocopies from the microfilm upon insertion of a coin.

The scientific library of the Patent Office, which is adjacent to the search room, is also accessible to the public. The library contains several hundred thousand volumes of technical literature, as well as patents from 26 foreign countries. The public search room and the scientific library are located at 2021 Jefferson Davis Highway, Arlington, Virginia.

In addition to the facilities at the Patent Office, more than 20 public libraries in the U.S. have collections of patents arranged in numerical order. These patents are supplied to the libraries under a special statutory authorization, at a nominal cost.

CLASSIFICATION INFORMATION

The Patent Office makes available several kinds and forms of information concerning the classification of patents. Keyboard-controlled, microfilm viewer terminals are located in the public search room. The microfilm is controlled by a minicomputer which controls a number of terminals. The viewer displays the class and subclass location within a few seconds after a patent number is entered on the keyboard. Classification data files on 16-mm microfilm are available through the National Technical Information Service (NTIS), Department of Commerce. In addition, paper copies of the U.S. classification manual, class definitions, and the classification index are available for purchase directly from the Patent Office.

TECHNOLOGY ASSESSMENT AND FORECAST

This program, which is administered by the Office of Technology Assessment and Forecast (OTAF), U.S. Patent and Trademark Office, was started in an effort to use patent data to pinpoint the most active areas of technology. The basic premise upon which the program is founded is that patent activity represents a highly significant measure of technological activity. Thus, if the number of U.S. patents in a particular area is growing rapidly, the assumption may be made that technological advance in that area is being actively pursued.

The patent activity data used in the program has been compiled from the Patent Office file of more than 11 million U.S. patent documents. Each year, approximately 250,000 new U.S. patent documents are added to this file, which is continuously scrutinized and restructured to accommodate the advent of new technologies and changes in existing technologies. The data contained in the patent file presently serve as the base for the assessments and forecasts of technology that are prepared by OTAF. It is recognized, however, that a better picture of the technological-economic interface may be obtained by supplementing patent data with other pertinent information. Hence, the program's data base has been designed for maximum flexibility to accommodate the planned addition in the future of various types of economic information (e.g., the distribution of research and development (R&D) expenditures, export-import data). With such additional data, it then would be possible to study more fully the interdependencies of patents, technology, and the economy.

The Patent Office has released five general-distribution OTAF reports on technological activity in specific areas. Recent efforts have focused on activity in areas such as coal gasification, oil shale technology, and other energy-related subjects. These analyses of trends in technological activity, based on patent files, will be of substantial benefit to individuals engaged in making decisions on research, development, and commercialization of new products.

The five general-distribution OTAF reports already released by the Patent Office are:

(1) *Initial Publication*, COM 73-10767 ($3.00)
(2) *Early Warning Report*, COM 74-10150 ($6.75)
(3) *Third Report*, COM 74-11383 ($5.50)
(4) *Fourth Report*, COM 75-10050 ($5.75)
(5) *Fifth Report*, COM 75-11142 ($6.25)

In addition to its general-distribution publications, OTAF prepares specialized or "tailored" reports on any area of technology upon request, on a cost-reimbursable basis.

For further information, contact: William S. Lawson, Director, Office of Technology Assessment and Forecast, U.S. Patent and Trademark Office, Washington, D.C. 20231, (703) 557-3051.

DEPARTMENT OF DEFENSE

DEFENSE DOCUMENTATION CENTER

TECHNICAL VOCABULARY

The Defense Documentation Center's (DDC's) newest technical vocabulary, entitled *DDC Retrieval and Indexing Terminology (DRIT)*, First Edition, was distributed in January 1975. The two-volume *DRIT* contains an alphabetical listing of posting terms within the Natural Language Data Base (NLDB). NLDB was developed by DDC in conjunction with its Machine-Aided Indexing (MAI) project. In addition, the second volume includes a hierarchical index, in which each generic term is displayed with the more specific terms listed underneath, according to their respective levels of specificity. The AD numbers assigned to these publications are AD-A001 200 and AD-A001 201, respectively. One copy of each volume was provided to DDC-registered users. Additional copies are available for sale from the National Technical Information Service (NTIS), Department of Commerce. The *DRIT* is produced directly, with only minor editing, from the NLDB which has been constructed from the text input to the Research and Technology (R&T) Work Unit Information System (WUIS), Independent Research and Development (IR/D), and the Research and Development (R&D) Program Planning data bases (DD-1498, DDC-271, and DD-1634, respectively).

MACHINE-AIDED INDEXING

The new Machine-Aided Indexing (MAI) system, developed by DDC, has been used successfully throughout the year for the assignment of retrieval terms, and is now being applied operationally to the indexing of new input to the WUIS (DD-1498), Program Planning (DD-1634), and IR/D (DDC-271) data bases. This process is being applied experimentally to the Technical Report input, which is currently being indexed manually, using the *DRIT*. This selective experimentation will continue as a step toward applying the MAI/NLDB process to all data bases.

REDESIGN/CONVERSION PROJECT

A long-range project has been initiated to redesign existing production and automatic data processing (ADP) systems. The effort is an outgrowth of a requirement that ADP systems be reprogramed in a high-level language, to enable the competitive selection of ADP equipment in the future.

DDC SUPPORT TO IACs

DDC's support program to the DOD Information Analysis Centers (IACs) has been extended to the Plastics Technical Evaluation Center (PLASTEC), Picatinny Arsenal, N.J. This effort will involve data input/file update capability and procedures, conversion of PLASTEC master file for DDC storage and processing, and extension of the existing support package. The DDC/IAC Service Support Program has been in operation since late 1974. The first two IACs to participate in the program were the Metals and Ceramics Information Center (MCIC), and the Nondestructive Testing Data Support Center (NTDSC).

PRIVACY ACT OF 1974

Social Security numbers included in the WUIS have been deleted, in conformance with requirements outlined in the Privacy Act of 1974.

USER NEEDS STUDY

A contract was awarded to Auerbach Associates, Inc., Philadelphia, Pa., to study the projected requirements for scientific and technical research data within the DDC-user community for the next ten years. Information gathered during this study is expected to provide a basis for the formulation and execution of development projects to satisfy user requirements and for the identification and correction of problem areas associated with current programs. The study, which began in July 1975, is expected to be completed in the spring of 1976.

WORK UNIT INFORMATION SYSTEM

A bilateral exchange of Work Unit information with the Canadian Defense Research Board is planned, pending the conclusion of negotiations between DOD and the Canadian National Defense Board. The DDC Work Unit information is part of the DDC WUIS (DD-1498) data base.

INDEPENDENT RESEARCH AND DEVELOPMENT

A change was made in the reporting format for the DDC IR&D (DDC-271) data base. Participants were given the option of submitting data on a standardized form or in machine-readable format. All contributors took advantage of the former option.

In October 1975, bibliographic data related to the IR&D base was made available through the online system to DOD classified terminals. This event fulfilled the DDC goal of displaying all four of the DDC data collections on the Defense Research, Development, Test and Evaluation (RDT&E) Online System.

COSMIC PROGRAM

DDC was directed to continue the registration functions for DOD participants in the Computer Software Management and Information Center (COSMIC) program. The COSMIC Information Center is located at the University of Georgia, under contract to NASA, and disseminates computer software developed for R&D programs. The COSMIC program enables reutilization as is, or with minor modifications, and obviates the requirement to develop duplicate software.

NASA/DDC TERMINAL EXCHANGE

DDC and NASA exchanged computer terminals during the past year. A NASA Remote Console (RECON) system terminal was installed at the DDC facility, and a DDC terminal was installed at the NASA Scientific and Technical Information Facility.

DEFENSE RDT&E ONLINE SYSTEM

Expansion of the number of terminals connected to the Defense RDT&E Online System continued during 1975. By the end of the year, there were 64 terminals linked to the central computer system in DDC. This number represents 10 inhouse terminals, and 54 terminal sites distributed throughout the U.S.

To provide the benefits of direct interactive access to its research data banks, DDC activated a remote terminal at the Defense Contract Administration Services Region (DCASR) in Los Angeles, Cal., in July 1975. Online customized bibliography searches are available to registered users in the area. Users are invited to visit the site, where a subject analyst assists in the development of search strategies and performs the terminal searches.

An identical program was initiated for users within a 100-mile radius of Washington, D.C. These searches are performed on a terminal located at the DDC facility in Alexandria, Va. Plans have been made to also provide these services to users in the Boston area. The site selected for this terminal is the U.S. Air Force Cambridge Research Laboratory, L. G. Hanscom Field, Bedford, Mass. This site is expected to be operational in March 1976.

A centralized training program is provided by DDC, for users of the online system, in the retrieval of data via terminals. A separate training program is provided for inputting data via the Remote Terminal Input System. Under a contractual agreement, the Battelle Memorial Institute is developing audiovisual training materials as a supplement to the on-site training program at DDC. These training packets will be provided to all remote online terminal sites.

BIBLIOGRAPHY PROGRAM

The output of 31,283 bibliographies in 1975 consisted of 17,620 current-awareness and 13,663 demand bibliographies. Compared to last year, this is an overall increase of 3% in total output, resulting from a 20% increase in current-awareness bibliographies.

TECHNICAL REPORTS

Secondary distribution of 572,742 copies of technical reports was made during 1975. Of the total number, 190,384 were shipped on demand and 382,358 were distributed automatically through the Automatic Document Distribution (ADD) program. In addition, primary distribution was made of 10,931 foreign reports.

PUBLICATIONS

Major publications produced by DDC in 1975 include the following:

–*DDC Referral Data Bank Directory* (AD A008 200)
–*Declassified AD Document Index* (AD A016 500)
–*Delimited AD Document Index* (AD A011 700)
–*Government Acronyms & Alphabetic Organizational Designations Used in DDC* (AD A006 800)
–*Source Hierarchy List* (AD A013 400)

COOPERATION WITH OTHER AGENCIES

Increased emphasis was placed upon liaison activities with users, and participation in conferences sponsored by other Government agencies, academic institutions, and industrial companies. Among these activities were quarterly and annual meetings with the users of the online system, regional users meetings, and national and international symposia.

In August 1975, the Acting Director of Development addressed the Fifth Cranfield International Conference on Mechanised Information Storage and Retrieval Systems, at the Cranfield Institute of Technology, Bedford, England. In October, the DDC Administrator attended the NATO AGARD Technical Information Panel meeting in Denmark. At this meeting, he was appointed to the Publications Committee. In addition, he will work with the Director of Scientific and Technical Information at NASA to finalize arrangements for the 1976 AGARD conference, to be held in the Washington area.

VISITORS

DDC continues to hold its weekly briefings and tours of the facility at 1:30 p.m. on Tuesdays. Among the foreign visitors to DDC last year were representatives of Canada, Sweden, and the United Kingdom.

For further information, contact: R.H. Rea, Defense Documentation Center, Department of Defense, Bldg. 5, Cameron Station, Alexandria, Virginia 22314, (703) 274-6844.

DEPARTMENT OF THE AIR FORCE

The U.S. Air Force (USAF) Scientific and Technical Information (STI) program is an integral part of the research, development, test, and evaluation (RDT&E) function of the Department of Defense (DOD). Primary responsibility for the USAF STI program rests in the Science and Technology Division, Directorate of Development and Acquisition, Headquarters United States Air Force (HQ USAF). The Scientific and Technical Liaison Division, Director of Science and Technology, Headquarters Air Force Systems Command (HQ AFSC) is designated the program monitor, and is assigned the authority and responsibility to act as the program manager and single point of contact. The major objective of the USAF program is to ensure that the scientific and technical information generated by RDT&E programs is used to provide the maximum contribution toward the advancements in technical areas of interest to USAF and DOD, and to contribute to the national research and development effort.

SIGNIFICANT EVENTS AND PROGRESS

Air Force-Industry Interface

The USAF utilizes several means for maintaining industry awareness of requirements and R&D plans and programs. To acquaint the industrial community with USAF information and its availability, a pamphlet explaining the "What, Where, and How" of USAF advanced planning information was published and distributed with the assistance of major industrial associations, the Small Business Administration (SBA), and the other military services and agencies. Additional copies are available from HQ AFSC/DLXL, Andrews Air Force Base (AFB), Washington, D.C. 20334.

One major change in the USAF Information for Industry program was implemented in 1975. The AFSC Planning Activity Report (PAR), previously available for review only at HQ AFSC, is now available for review at five additional locations: (1) Aeronautical Systems Division (ASD/XRG), Wright-Patterson AFB, O.; (2) Air Force Special Weapons Center (AFSWC/SA), Kirtland AFB, N. Mex.; (3) Armament Development and Test Center (ADTC/XR), Eglin AFB, Fl.; (4) Electronic Systems Division (ESD/XRU), L.G. Hanscom AFB, Mass.; and (5) Space and Missile Systems Organization (SAMSO/XRS), Los Angeles Air Force Station (AFS), Cal.

Air Force Utilization of GIDEP

During 1975, the USAF accomplished a revision to MIL-STD-1556A (USAF, June 14, 1974) the document which provides the means for contractually requiring participation in GIDEP. The revision, MIL-STD-1556A (USAF, February 29, 1976), will be printed and distributed in the spring of 1976. Triservice coordination is planned later in 1976. The USAF Defective Parts and Components Control Program (DPCCP), a closed-loop system for recognition, elimination, and future avoidance of defective parts, now utilizes GIDEP's ALERT system as its data dissemination and retention medium. (GIDEP is funded by the U.S. Government and managed by the Naval Material Command. For additional information about GIDEP, see Department of the Navy).

TECHNOLOGY TRANSFER

Abstracts of New Technology

Since 1971, USAF and SBA have cooperatively administered a Technology Application and Utilization program to assist small businesses by improving their access to USAF-developed technology. Under this program, USAF obtained Abstracts of New Technology (ANTs) from contractors, which were disseminated by SBA to potential users throughout the small business community. During 1975, this program was expanded on the part of USAF to require the publication of ANTs when appropriate on research and development (R&D) conducted in-house. Additional channels are being investigated for making the ANTs available to the entire industrial community and to educational institutions.

Patent Applications and Patents

Information regarding inventions for which USAF retained (or obtained) title is provided to DDC and, in turn, to NTIS. This information includes unclassified patent applications and the issued patents for those applications which were either classified or submitted prior to this procedure being instituted. NTIS announces this information in the *Official Gazette* of the U.S. Patent and Trademark Office (Department of Commerce), in the *Federal Register*, and in its own publication, *Government Inventions for Licensing.* During 1975, USAF forwarded 397 patents or patent applications for announcement by NTIS.

AEROSPACE STRUCTURES INFORMATION AND ANALYSIS CENTER

The Aerospace Structures Information and Analysis Center (ASIAC) is located within and operated by the Air Force Flight Dynamics Laboratory (AFFDL), Wright-Patterson AFB. Although funded by USAF, its services are available for free to other government agencies, within funding limits. Government contractors may receive information from ASIAC, provided that their contracting officer or technical monitor certifies that a need-to-know exists and the request is approved by the Structures Division of the AFFDL. The response to ASIAC and its services has been gratifying. Requests for ASIAC services ranged from 50 to 80 monthly during 1975.

One of the auxiliary functions of the ASIAC is to make available structural computer programs that are not available at other computer program dissemination centers. During 1975, the ASIAC inventory of such programs was substantially increased, and over forty programs are available upon request with a valid need.

Further information about the capabilities and services of ASIAC may be obtained from AFFDL/FRB, Wright-Patterson AFB, Ohio 45433, (513) 255-6688 (AUTOVON 785-6688).

DEFENSE RDT&E ONLINE TERMINALS

Seven online terminals for the Defense RDT&E Online System at DDC have been installed at USAF activities. Two became operational in 1975 and two additional installations are to be completed in early 1976. Five classified online terminals are located at USAF laboratories and unclassified terminals are operated by the School of Systems and Logistics of the USAF Institute of Technology and by the USAF Environmental Technical Applications Center.

Evidence of the usefulness of these USAF terminals is provided by their high degree of utilization, as revealed by DDC's monthly Summary Management Data Report, which shows an increase of 50% in the number of searches during Fiscal Year (FY) 1975 (13,368 in FY 1974, 20,222 in FY 1975). This high utilization has continued; during the first half of FY 1976, nearly 10,000 searches were completed.

For further information, contact: Major H. Hock, Scientific and Technical Liaison Division, U.S. Air Force Systems Command (DLXL), Andrews AFB, Washington, D.C. 20334, (301) 981-2414.

DEPARTMENT OF THE ARMY

The objectives of the Army's Scientific and Technical Information (STINFO) program are to initiate, stimulate, and improve the derivation, flow, and use of scientific and technical information into, through and from all U.S. Army elements. This involves the acquisition, analysis, processing, documentation, recording, storage, retrieving, selection and dissemination of all information related to RDT&E. Emphasis is placed on technology transfer within the Federal government, and with other governments, industry, nonprofit institutions and academic institutions.

Central management of all Army activity in Scientific and Technical Information was transferred in 1975 from the Department of the Army, Pentagon, to U.S. Army Materiel Development and Readiness Command, Alexandria, Va.

During 1975, the number of operational Army terminals connected to the DDC computer was increased to 23. Three more are planned for 1976.

The Improved Data Effectiveness and Availability (IDEA) project effort previously reported was removed from the STINFO program early in 1975 for administrative reasons.

In 1975, the Army STINFO program was consolidated under seven projects involving:

(1) Integrated Software
(2) Automated Engineering Document Preparation
(3) Information Technology
(4) Technical Information Functional Activities
(5) Symposia and Conferences
(6) Technical Information Analysis Centers
(7) Sigint/EW Technical Information

INTEGRATED SOFTWARE

The objective of the Integrated Software project is to provide management services and perform studies in support of the Army Integrated Software Research and Development (ISRAD) Program. This was included in the STINFO program late in 1975.

AUTOMATED ENGINEERING DOCUMENT PREPARATION SYSTEM

AEDPS is a new concept in the preparation of documentation for weapon system procurement. It uses computer techniques to prepare these documents for less than one-tenth the cost of conventional methods. The key to this cost-saving is the development and computer processing of generic names of the most common parts of weapon systems (e.g. resistors). The goal of AEDPS is a data base containing 139 such names. Approximately 15 of these names were completed in 1975, for a total of 81 completed to date.

TECHNICAL INFORMATION FUNCTIONS AND ACTIVITIES

TIFA supports development activitiy in the Army's research and development information system; this assures the essential documentation of ongoing R&D activity and enables online access to tens of thousands of records from widely dispersed activities. Output from this effort serves both Army and DOD management information needs. Software for financial management was developed by a contractor; however, in-house maintenance and updating of software is under consideration.

INFORMATION TECHNOLOGY

The objective of IT is to develop information sciences, technology transfer techniques, and data exchange techniques related to Army needs. A project providing a computer link between the Army Library and OCLC, through the Smithsonian Institution, was initiated in 1973. An objective was to enable hundreds of libraries to be networked for the sharing of services and collections. Early tests involved the shared cataloging of widely dispersed collections. A final report, *Federal Libraries Experiment in Cooperative Catalogi*[illegible] 14, 1975, is available from NTIS. The Army's participation in extensive experimentation in the sharing [illegible] services and collections through computer networking is continuing.

Testing of Selective Dissemination of Information Extended (SDIE) was completed and final reports were prepared by DDC. This "current awareness" project now enables 250 technical people to be regularly supplied with specific information from the literature in their respective fields of specialty.

The Army is one of the participants in GIDEP. GIDEP is funded by the U.S. Government and managed by the Naval Material Command. For a further description of GIDEP, see Department of Navy.

SYMPOSIA AND CONFERENCES

This project sponsors the Junior Science and Humanities Symposium (JSHS), International Science and Engineering Fairs (ISEF), and the Army Science Conference. The JSHS enables high school science students to participate in technical paper competition in any of 40 regions in the United States and Europe. The culmination of this participation is a national symposium and participation in the London International Youth Science Fortnight. The ISEF involves 240 regional fairs and enables high school students to participate in science project competition (The Navy and Air Force share sponsorship with the Army.) This competition culminates in international student participation in Operation Cherry Blossom, Tokyo, Japan, and also in Nobel Prize Ceremonies, Stockholm, Sweden. These involvements stimulate interest and initial experience in Army-related research needs. A third major effort in the Symposia-Conferences project is sponsorship of the biennial Army Science Conference at West Point, New York. The objective is to provide Army scientists an opportunity for paper presentation for professional competition and for technology transfer.

TECHNICAL INFORMATION ANALYSIS CENTERS

Seven Army sponsored centers acquire, collate, assemble, analyze, repackage, and distribute technical information in specialized disciplines. Further, scientific or engineering problems or questions in these fields may be submitted by anyone by telephone or correspondence. In-house expertise usually provides answers and/or guidance; however, consultants are also used. One new center (Cold Regions Information Analysis Center) was established at Hanover, N.H., in 1975. The sponsorship and management of an eighth center (Non-Destruct Information Analysis) was transferred from the Army to the Defense Supply Agency. Applications for the establishment of three additional centers have been received and are under consideration.

SIGINT/EW TECHNICAL INFORMATION

The objectives of this project is the development of effective handling techniques for technical information that are specifically applicable to the requirements of Army Intelligence. A low-level contract to define the initial concept has been activated.

For further information, contact: E.J. Kolb, Director, U.S. Army Technical Information, Headquarters, U.S. Army Materiel Development and Readiness Command, Alexandria, Virginia 22333, (202) 274-9445.

DEPARTMENT OF THE NAVY

The Navy Technical Information Program supports the management of the Navy RDT&E Program by the acquisition and dissemination of scientific, technical, and management information. Its function is to improve and facilitate the flow of information within the Navy, and between the Navy and other agencies within DOD, other Government agencies, and industry, respectively.

NAVY INTERFACE WITH INDUSTRY

Navy Research and Development Information Center

The Navy Research and Development Information Center (NARDIC) is the focal point within the Navy for making information on research and development (R&D) planning and requirements available to industry, universities, and nonprofit institutions. NARDIC's two branches–NARDIC/West, in Pasadena, Cal., and NARDIC/East, in Washington, D.C.–provided Navy requirements to approximately 800 industry and small business representatives in 1975.

NARDIC services were revised and expanded during 1975 to meet the changing and growing needs of both the Navy and industry. Sanitized and unclassified versions of the Program Element Descriptive Summaries originally prepared for the Congress were added to the NARDIC document collection in 1975. R&D documents now available in the NARDIC offices also include *Operational Requirements, Science and Technology Objectives, Specific Operational Requirements, Tentative Specific Operational Requirements, Advanced Development Objectives, Research and Development Planning Summaries, Proceedings of Advanced Planning Briefings for Industry, Research and Technology Work Unit Summaries, Laboratory Program Summaries,* and various other requirements and planning documents.

An Army Technical Information Liaison Office (TILO) was collocated with the NARDIC/West Office in 1975. Collocation of the Army and Navy industry information offices provides industrial users with more efficient and better focused services.

Installation of a secure online terminal to the DDC RDT&E data banks was begun at NARDIC/West in 1975, and the terminal became operational early in 1976. Both NARDIC offices can now augment their services to industry with information from these data banks.

NARDIC and Industry/Small Business Conferences

At the request of Congressional sponsors, NARDIC representatives attended five Business Opportunity/Federal Procurement Conferences in California and Maryland, where they served as counselors on the Navy's R&D planning and requirements that are available to industry. Both industry and the NARDIC representatives reported the counseling to have been mutually beneficial.

NARDIC personnel also participated in the 1975 Advanced Planning Briefing for Industry and in several laboratory technical briefings for industry, as well as in conferences held by the National Security Industrial Association and the Electronics Industry Association.

Advanced Planning Briefing for Industry

A three-day Advanced Planning Briefing for Industry sponsored by the Naval Material Command and the Naval Sea Systems Command, with the support of the American Defense Preparedness Association, was held November 4-6, 1975, at the Naval Surface Weapons Center, Silver Spring, Md. The theme was "Meeting Tomorrow's Threat." Approximately 270 industry representatives attended the briefing.

TECHNOLOGY TRANSFER AND COOPERATIVE DEVELOPMENT

Technology Transfer Meetings, Workshops, and Services

Briefing on Technology Transfer Projects. A one-day briefing on technology transfer projects was held at the Naval Sea Systems Command Auditorium, Washington, D.C., on June 9, 1975. The briefing was organized by the Naval Postgraduate School, and presented a progress review of the concepts, framework, processes, and methodology of technology transfer. Approximately 100 representatives from industry and Federal Government agencies attended the briefing. The proceedings of the briefing will be published in the spring of 1976.

Second Annual California Federal Laboratory Technology Transfer Consortium Seminar/Workshop. Ten Federal laboratories from California participated in the one-day Second Annual California Federal Laboratory Technology Transfer Consortium Seminar, held by the Naval Electronics Laboratory Center on November 24, 1975. The Federal laboratories participating included six Navy activities and four non-DOD laboratories.

Workshop subject areas covered automatic data processing, energy, the environment, health and medicine, industry/local government technical data sources, personnel, public safety, and public works. The workshop on industry/local government technical data sources was conducted by NTIS.

Attendance at the 1975 California seminar/workshop was more than double that of 1974. The 242 attendees included representatives from several California state and local government agencies, private industry, and Federal agencies.

1975 NATO Advanced Study Institute on Technology Transfer. A NATO Advanced Study Institute (ASI) on Technology Transfer was held at Les Arcs, Bourg St. Maurice, France, June 22-July 3, 1975. This Institute was sponsored by NATO, and by the Department of the Army, the Department of the Navy, and the National Science

Foundation. The Les Arcs ASI, entitled *Industrial Application of Technology Transfer*, was designed to provide an international forum for the exchange of information about technology transfer in industry, where most technology transfer actually occurs. The meeting explored industrial applications of technology transfer in the context of domestic industry, multinational firms, government policy and activities in international trade, and the technological and economic growth of the less developed countries (LDCs).

Rear Admiral C. P. Ekas, Jr., USN, Deputy Chief of Naval Material (Development) and Director of Navy Technology, was the Institute's keynote speaker. His speech, "Technology Transfer in the United States," led the able descriptions by DOD speakers on the procedures, successes, and failures of technology transfer from the U.S. military to the civilian sector in the United States and to the other NATO countries.

Technology Transfer Publications

Proceedings of the Technology Transfer Seminar/Workshop on the Application of Pollution Abatement Technology to Local Government. The *Proceedings* of the one-day seminar/workshop sponsored by the David W. Taylor Naval Ship Research and Development Center and held at the U.S. Naval Academy, Annapolis, Md., on October 16, 1974, to explore the application of pollution abatement technology to local governments, were published and distributed in May 1975.

Directory of Navy Scientific Investigators. In November 1975, a new and enlarged edition of the Directory of Navy Scientific Investigators was issued in three parts:

- Directory of Principal Scientific and Technical Investigators of Ongoing Navy Contracts and Grants by Technology Area,
- Directory of Responsible Individuals of Ongoing Navy Contracts and Grants by Technology Area,
- Directory of Navy In-house Principal Scientific and Technical Investigators by Technology Areas.

The Directory provides an index by technological area to the names and telephone numbers of more than 8,000 Navy-sponsored principal investigators currently working on Navy work unit efforts in research and technology. It also provides an index by technological area to the sponsoring activities and individuals responsible for the approximately 3,000 current Navy contract and grant work units in research and technology.

Executive Summary of the Second Annual Report (Fiscal Year 1974) on the Technology Transfer and Cooperative Development Program for the Department of the Navy. The *Executive Summary of the Second Annual Report* of the Navy's technology transfer and cooperative development program briefly summarizes the combined objectives and results of the approximately 150 active technology transfer projects of the Navy during FY 1974. Publication of the comprehensive report on which the *Executive Summary* was based is planned for informal distribution in 1976.

Technology Transfer FACT SHEET. The first issue of the *Technology Transfer FACT SHEET* was published in December 1975. The purpose of the *FACT SHEET* is to provide a monthly forum for selected current Naval technology items having a high potential for civilian applications. The distribution list for the first issue included nearly 1,000 carefully selected U.S. companies, both large and small, as well as Federal Government agencies, state and local governments, and others with a particular interest in technology transfer.

DEFENSE RDT&E ONLINE TERMINALS

Seventeen online terminals for the DDC RDT&E Online System have been installed at Navy activities. Sixteen of the online terminals are now operational at Navy RDT&E activities and at Headquarters Naval Material Command, the Naval Academy, the Naval Postgraduate School, and the Naval Medical Research and Development Center. The seventeenth terminal was installed at the Naval Ordnance Station, Indian Head, Md., in December 1975, and became operational early in 1976. Fourteen of the Navy activities with online terminals connected to the DDC information network have secure terminals, and thus have online access to the newly available Industry/IR&D data bank (DDS-271), in addition to the DD-1634, DD-1498, and the Technical Reports (DD-1473) data banks at DDC (which are also accessible by non-secure terminals).

An indication of the usefulness of the online terminals to Navy RDT&E management and technical personnel is the report from DDC that 35,728 searches (involving one or more questions) were made from the terminals at 16 Navy activities during 1975. This constitutes an increase of more than 10% in number of searches over those reported for FY 1974.

PUBLIC RELEASE OF INFORMATION

More than 3,138 items (including news releases, speeches, technical papers, and films) were released to the public by Naval Material Command components during 1975. This represents a 10% increase over the number of items released to the public in 1974. This increase reflects the Navy's continuing and increased responsiveness to the spirit and intent of the Freedom of Information Act by providing access to Navy information.

INDEPENDENT RESEARCH AND DEVELOPMENT

Beginning in May 1972, a series of briefings in the Washington area have been conducted by companies in the IR&D program, to provide RDT&E managers in the Naval Material Command and in other Government agencies with information about current IR&D developments. Four IR&D briefings were held in 1975. A majority of the attendees who evaluated these briefings reported that the briefings would influence their respective R&D efforts or planning.

THE SHOCK AND VIBRATION INFORMATION CENTER

The Shock and Vibration Information Center (SVIC), located at the Naval Research Laboratory, Washington, D.C., is the Navy's Information Analysis Center. As a DOD Information Analysis Center (IAC), SVIC is exceptional, not only in the services which it provides to its users but also in that SVIC is one of the few Federal IACs that derives more than half of its support from subscribers to its services.

During 1975, in addition to its regular services, which included publication of its monthly abstract journal, *The Shock and Vibration Digest*, SVIC also held its 46th Shock and Vibration Symposium. The 46th Symposium was held in San Diego, Cal., and attracted nearly 400 representatives from industry and Government. Papers presented at the Symposium will be published by SVIC in its 46th *Shock and Vibration Bulletin.*

In 1975, SVIC also published its tenth state-of-the-art monograph, *Shock and Vibration Programs–Reviews and Summaries.* This 663-page book, written and edited by leading authorities, reviews and summarizes shock and vibration programs, and is intended to help its readers select the best available computer software to solve their particular shock and vibration problems.

During 1975, SVIC, in cooperation with NASA, conducted its first seminar designed to provide support to the technical community on recent technological advances in shock and vibration research. In the interest of travel economy, the Seminar on Understanding Digital Control and Analysis in Vibration Test Systems was held on both the East and West coasts, and each was attended by 150 members of the technical community.

GOVERNMENT/INDUSTRY DATA EXCHANGE PROGRAM

The Government/Industry Data Exchange Program (GIDEP) is a cooperative activity between Government and industry participants who seek to reduce or eliminate expenditures of time and money by making maximum use of existing knowledge. GIDEP provides a means to automatically exchange certain types of technical data essential in the research, development, production, and operational phases of the life cycle of systems and equipment.

GIDEP is funded by the U.S. Government; its program manager is located at Headquarters Naval Material Command. Participating organizations, in addition to the Navy, are the Army, the Air Force, and various other Government agencies, as well as industrial/commercial organizations and the Canadian Department of Defense.

Participants in GIDEP are provided access to four major data banks:

(1) Engineering Data Bank
(2) Failure Experience Data Bank
(3) Failure Rate Data Bank
(4) Metrology Data Bank

Two special services available to GIDEP participants are:

(1) The Alert System, which notifies participants of problem areas;
(2) The Urgent Data Request System, through which a participant may query all other GIDEP participants on specific problems.

During 1975, GIDEP was directed to integrate what was formerly the Secretariat for Electronics Test Equipment into GIDEP. This is being done, and is providing a tremendous boost in the quantity and quality of information and services available from the Metrology Data Bank to GIDEP participants.

As part of the GIDEP foreign data exchange effort, a limited international exchange of reliability data on selected test information on electronic parts and components has been established between GIDEP and its international counterpart, the EXACT (International Exchange of Authenticated Electronic Component Performance Test Data) program, which is located in Sweden. The test reports GIDEP receives from EXACT are included in the Engineering Data Bank.

New Addition to GIDEP Data Banks

During 1975, GIDEP, in coordination with the Joint Technical Group for Aircraft Depot Maintenance, has been in the process of developing a new data bank for the purpose of exchanging aircraft maintenance techniques and procedures among the service aircraft maintenance facilities and certain, selected, commercial aviation repair facilities. This bank has been given the acronym ADMIT, for Aeronautical Depot Maintenance Industry Technology. This new addition to the GIDEP data banks is not yet fully operational, but is expected to be soon.

For further information, contact: P.B. Newton, Jr., Director, Navy Technical Information, Headquarters Naval Material Command, Washington, D.C. 20360, (202) 692-0515.

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

FOOD AND DRUG ADMINISTRATION

BUREAU OF DRUGS

The Bureau of Drugs maintains numerous data bases which are used to assist with day-to-day operations, aid in the Investigational New Drug (IND) and New Drug Application (NDA) review process, and make available data on products and industries regulated by the Bureau and information about adverse reactions and other experience with the regulated products. Statistical software systems are used to analyze collected data and evaluate the data for various parameters (e.g., toxicity, quality, adverse reactions, predicted activities of drug products or specific ingredients contained in certain drug classes). These systems also assist in the statistical evaluation of INDs and NDAs.

Minicomputers are currently being used to operate and collect data from laboratory instruments used in the chemical analysis of drug products. The Bureau will continue to evaluate minicomputers for their applicability to both planned systems and those systems currently operating on the Parklawn Computer Center configuration. Two possible applications in particular have been identified as warranting consideration. A scientific minicomputer is seen as possibly being useful for the statistical programming and analysis done by the Division of Biometrics. A second potential application is the Antibiotic Batch Certification System. This system is totally interactive and has been seriously impacted by the high rate of computer-service interruptions experienced at PCC. The increasing use of online facilities is expected to further degrade the response time for this effort.

Future efforts in the development and operation of computer systems will continue to focus on the maintenance of data files to assist in the operations of the Bureau. The feasibility of an integrated Bureau-wide data base will be investigated. Such a data base would contain all information pertaining to drugs and thus allow users to have access to all logically related drug data without the traditional constraints of file organization. It would provide a single data-entry point, eliminate redundant data, provide data security, and facilitate cross-file queries. If the data-base effort is successful, it will be possible to respond more quickly and accurately to diverse Bureau information requirements.

Major efforts proposed to support a new program, Prescription Drug Labelling and Compendium, include a management information system to monitor drug-labelling revision correspondence with drug firms. If FDA decides to develop a prescription drug compendium, a subset of the previously described data-base system could be generated which would contain all package-insert information by drug class, from which camera-ready copy could be provided.

For further information, contact: D. Moss, Bureau of Drugs, Food and Drug Administration, 5600 Fishers Lane, Rockville, Maryland 20852, (301) 443-2836.

NATIONAL INSTITUTE OF EDUCATION

EDUCATIONAL RESOURCES INFORMATION CENTER

The Educational Resources Information Center (ERIC) of the National Institute of Education was established to meet the increasing need for improved access to education literature. ERIC's mission was and remains the acquisition, screening, abstracting, indexing, and announcement and dissemination of technical information in the field of education. Although it was originally assumed that the primary users of ERIC would be educational researchers, it has become increasingly apparent that ERIC's user population is in fact more diverse. In addition to educational researchers, other key elements of the user population include teachers, administrators, boards of education, legislators, education students, and, in increasing numbers, community groups.

The original products of ERIC included a monthly announcement bulletin, *Resources in Education* (published by GPO), and microfiche and hardcopy forms of items cited in *Resources in Education*. In addition to its original products, the range of ERIC's products and services now include the *Current Index to Journals in Education* (published monthly by MacMillan Information), tapes of the ERIC data base, and a variety of special information products generated from the ERIC data base by private companies. In December 1975, the ERIC file contained more than 234,000 citations, over 112,000 of which were technical documents cited in *Resources in Education*; the remainder were journal-article citations in the *Current Index to Journals in Education*.

The major components of the ERIC system include:

- The ERIC facility,
- 16 subject-oriented clearinghouses,
- The ERIC Document Reproduction Services.

The clearinghouses have been a significant component of ERIC from its inception. Each clearinghouse acquires, screens, abstracts, and indexes documents within the scope of its responsibility. The clearinghouses also develop information analysis products, and provide such services to users as question-answering training in the use of ERIC and referral services. Recent data indicate that the minimum number of annual ERIC uses is at least 12 million, with an approximate breakdown of uses being:

–Students in higher education	60%
–Educational practitioners and decision-makers	25
–Educational researchers	5
–Miscellaneous	10

Although these figures would suggest that researchers make relatively little use of ERIC, it should be noted that recent estimates indicate that the equivalent of only 10,000 fulltime persons are engaged in educational research in the United States.

Approximately 615 organizations and agencies maintain a complete collection of all ERIC documents. Of these, the great majority are in institutions of higher education. Fifty-two are in foreign countries, and most of the remainder may be found in state or local education agencies. Approximately 5,000 subscriptions to *Resources in Education* are sold annually, and 2,300 subscriptions to *Current Index to Journals in Education.* Over 16 million ERIC microfiche are sold annually. Most are acquired as parts of standing orders for the entire ERIC collection, but some 60,000 microfiche titles are purchased on a demand basis annually, and a similar number of titles purchased in hardcopy. Some 300 agencies have computer access to the ERIC file.

Although the most common use of ERIC resources is probably the individual user manually searching *Resources in Education* and then checking microfiche, there is an increasing trend toward the development of special information service centers in institutions of higher education, state and local educational agencies, and intermediate service units. These centers usually have an active outreach program. Services commonly provided include: response to queries, search and retrieval, microfiche and hardcopy reproduction, client debriefing, and referral services. Increasingly, these centers are beginning to develop their own files to augment ERIC–human resources files for referral of clients to sources of special expertise; reports of promising or verifiably effective classroom practice; and professional library or curriculum files, indexed with the controlled vocabulary originally developed for use in ERIC.

These centers are also relying upon computer-searching to meet client requirements. Although batch-searching is common, approximately 2,500 centers currently subscribe to interactive search services which permit interactive searching of the ERIC file and provide access to a number of other files which are of benefit to educators.

The range of services and products offered by ERIC was not expanded in 1975; however, improved quality control procedures were instituted, along with increased emphasis on improvement in accessibility. Two different strategies were employed for improvement of accessibility. The first was the inclusion of publication type codes and leveling terms (e.g., elementary, junior college, etc.) in the citation of each document. The second, and more important, consisted of a series of workshops for the 550 subscribers to the ERIC collection. These workshops were directed toward the training in uses of ERIC products and services; and also provided the participants an opportunity to voice their concerns and needs to the system operators.

The National Micrographics Association, at its annual meeting in April, 1975, presented a special award to ERIC "in recognition of pioneering leadership in the field of micrographics."

In addition to the improvement of information systems and services, an attempt is being undertaken to build a more extensive and effective infrastructure for dissemination and utilization of education knowledge. The general strategy of the NIE is to enhance the capacity of those existing institutions and agencies concerned with the dissemination and utilization of knowledge, rather than the creation of new mechanisms. Beginning with pilot work in three states in 1970, there has been an attempt to develop a generalized capacity for the dissemination and utilization of knowledge in state educational agencies. During 1975, 10 capacity-building, 5 special purpose and development grants were awarded to plan, build and institutionalize the capacity to search and retrieve from ERIC and other information data bases, and provide assistance to local educators in using knowledge to solve educational problems. Support will be provided to states for a period of 3-5 years. An additional 10-15 states will be awarded grants in 1976, with a goal for the future of extending to all other states interested in building and maintaining such dissemination capacity.

For further information, contact: Thomas Clemens, National Institute of Education, Department of Health, Education, and Welfare, 1200 19th Street N.W., Washington, D.C. 20208, 254-7930.

NATIONAL LIBRARY OF MEDICINE

The National Library of Medicine (NLM), which is a part of the National Institutes of Health (NIH), saw the end of an era on February 28, 1975, when the last production job was run on the Library's original MEDLARS (Medical Literature Analysis and Retrieval System) computers. The next day, both hardware and software were withdrawn from operation.

MEDLARS, begun in 1964, was a pioneering effort in large-scale computerized bibliographic retrieval. Since its beginning, the Honeywell computers, which formed the heart of MEDLARS, had processed over 100 issues of *Index Medicus* and numerous other biomedical bibliographies used throughout the world. Its successor is MEDLARS II, which incorporates completely new software operating on two IBM 370/158 computers. The new system is used for both the preparation of publications and online searching through MEDLINE (MEDLARS Online) and other data bases.

Joining these data bases in 1975 was a new computerized file of information: AVLINE (Audiovisuals Online). AVLINE is a steadily growing data base of references to peer-reviewed audiovisual teaching packages. The Library, through its component in Atlanta, the National Medical Audiovisual Center, has been engaged during the past several years in cataloging the vast array of health-science audiovisual materials now available. Before being placed in AVLINE, these biomedical films, videotapes, slide packages, etc., are evaluated by non-Government professional organizations working with the Center.

AVLINE is offered in parallel with and to all users of MEDLINE and is available at the more than 350 health science institutions that have MEDLINE terminals. As with MEDLINE, which provides journal article references, AVLINE retrieval is based on a thesaurus of medical subject headings under which the materials are cataloged. For AVLINE, however, there is additional information pertinent to the use of audiovisual materials. For example, a user may be limited to 16-mm motion pictures or 3/4-inch videotape playback. There are more than 60 data elements or descriptors in the AVLINE system (e.g., title, abstract, audience level, playback medium, author, source, and price). Any or all of these data elements may be requested for each citation retrieved.

The Library's Presidentially-appointed advisory body, the Board of Regents, approved a new rate structure for online services. The user's cost will be $15 per terminal-connect hour during prime time (10:00 a.m. to 5:00 p.m.) and $8 per terminal-connect hour at all other times (a terminal-connect hour is an hour in which a terminal is connected to the computer). The new rate structure became effective July 1, 1975.

Also new in 1975 was the availability in MEDLINE of English language author abstracts. Taken from selected serials, these are now being entered into the data base; some 45,000 were available online by the end of the year.

LIBRARY OPERATIONS

The volume of requests for interlibrary loans has increased greatly in the last year. The most recent figures show that over 1,100 requests are received each working day. The Reference Services Division has filled 81 percent of the requests accepted, 86 percent of these within four working days. Last year, an experimental referral system named DOCLINE (Document Delivery Online) was begun, which utilized Telex to transmit unfilled interlibrary loan requests to the British Lending Library in Boston Spa, England. Begun as an experiment, DOCLINE has now developed into the initial phase of a computer-based interlibrary loan verification, routing, and management information system. At present, requests for referral are input into the NLM computer which is then accessed by the British Library Lending Division. During the next few years, NLM plans to develop automatic interregional routing of referrals and referrals between NLM and major libraries abroad.

Reference inquiries reached a new peak in 1975: 29,406 requests for reference assistance were received by mail and telephone and in person. In addition, over 320,000 requests were made in the past year for material from the general collection for both on- and off-site use, probably the greatest annual demand in the Library's history.

LISTER HILL NATIONAL CENTER FOR BIOMEDICAL COMMUNICATIONS

The Lister Hill Center's involvement with communication using NASA's ATS-6 satellite ended in 1975 as the satellite was moved to provide service to India. The ATS-6 experiments were conducted by the Indian Health Service in Alaska and by the WAMI (Washington, Alaska, Montana, Idaho) Program based at the University of Washington in Seattle.

Although formal evaluation of the ATS-6 experiments has not yet been completed, it is possible to conclude that use of a satellite to provide two-way video communication between a hospital-based physician and health aides in distant villages is feasible in, Alaska--the aides feel more secure and less isolated, the patients have more confidence in the treatment, and unnecessary travel by patients and physicians can be virtually eliminated The WAMI Program demonstrated the advantages in regional sharing of people and facilities in medical education. The interactive video, audio, and data communications network allows faculty and students at several campuses and at remote clinical training locations to participate in an integrated medical education program.

In 1975, the Lister Hill Center also ended its support of a project to foster the sharing of computer-assisted instruction (CAI) resources among medical schools and hospitals. CAI programs produced at the Ohio State University College of Medicine and at the Massachusetts General Hospital were put online via a nationwide timesharing communications network. More than 80 institutions have used the network for a variety of educational purposes. A Health Education Network User Group has developed a funding mechanism which will assure the self-sustained continuation of the network.

NATIONAL MEDICAL AUDIOVISUAL CENTER

During the past fiscal year, the Center's distribution program acquired 105 new titles for the audiovisual collection, while 141 titles of non-professional subjects were withdrawn. The program processed some 62,000 requests for audiovisuals and in response shipped 51,000 films, 2,250 videotapes, and 4,800 audiotapes. Also during the same period the Center supported the production of 25 slide series, 22 motion pictures, 18 videotape and 4 audiotape programs, and 2 filmstrips. Notable among these was Project ACORDE (A Consortium On Restorative Dentistry Education), a series of 14 short teaching films with accompanying instructor guides on the subject of restoration of cavity preparations. As with most other of the Center's media development projects, Project ACORDE was a cooperative effort involving other Federal agencies, professional societies, and academic organizations.

Some statistics for FY 1975 (ending June 30, 1975) for the National Library of Medicine are as follows:

Collection (book and nonbook)	1,481,889
Serial Titles received	25,228
Items cataloged	12,844
Articles indexed for MEDLARS	220,800
Circulation requests filled	247,614
For interlibrary loan	173,642
For readers	73,972
Reference requests	29,406
Online searches (all data bases)	402,058

These statistics do not include the activities of the National Medical Audiovisual Center.

For additional information, contact: Robert B. Mehnert, Office of Inquiries and Publications Management, National Library of Medicine, 8600 Rockville Pike, Bethesda, Maryland 20014, (301) 496-6308.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

LIBRARY DIVISION

The HUD Library's first full year of participation in the Ohio College Library System Network was very successful. Through the Federal Library Committee, HUD was able to share its cataloging with a nationwide network of other libraries and gain access to their respective bibliographic data bases, thus expanding the Library's resources.

The Library's outreach program included several publications. A two-volume *1975 Second Supplement* to the *Dictionary Catalog of the United States Department of Housing and Urban Development Library* was published by G.K. Hall, Boston, Massachusetts. It may be purchased from the publisher.

In 1975, the Library published a revised edition of its *Urban Vocabulary,* which is free upon request from the Library. The Library also published, in 1975, the following highly selective bibliographies: (1) *The North American Indian; A Bibliography of Community Development* (available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, at a cost per copy of $1.30); (2) *A Land Use Resources List;* (3) *Aids to Understanding HUD;* (4) *Urban Homesteading.* The latter three are available without charge from the HUD Library. A comprehensive paper, *Promoting the Use and Insuring Access to HUD Publications,* was written and is available from the Library. It will also appear in an early 1976 issue of *Government Publications Review.*

For the first time, a HUD Handbook (2265.3), *Field Library Guidelines,* was issued to promote the HUD field library system. This handbook may be obtained free of charge from the HUD Library.

By changing its administrative style and participating in Management by Objectives, new major goals have been delineated and accomplishments toward meeting these goals achieved at an accelerated pace.

For further information, contact: Elsa S. Freeman, Director, Library Division, Department of Housing and Urban Development, Washington, D.C. 20410, (202) 755-6376.

OFFICE OF COMMUNITY PLANNING AND DEVELOPMENT

The Office of Community Planning and Development, in 1975, published several documents to assist communities in complying with the requirements of the Community Development Block Grant (CDBG) Program. A revision of OMB Circular A-95 has been issued in the *Federal Register* to assist localities in meeting the requirements for clearinghouse review of CDBG applications. A Program Guide was prepared to assist grantees, under Title I (Community Development Block Grant Program) of the Housing and Community Development Act of 1974, in conducting environmental reviews of community development activities. The 1974 Act stipulates that localities carry out the environmental review process for these community projects. This provision introduced to many communities an entirely new area of administrative responsibility. The Program Guide is intended to aid in the preparation of these environmental reviews.

The Community Planning and Development Office also published, in 1975, two reports on the CDBG Program, the second of which was required under the 1974 Housing Act. In April, HUD published the *Community Development Block Grant Program, A Provisional Report.* Based on an analysis of grant applications and a survey of 128 cities, the 130-page report presents preliminary indications of how grant recipients planned and organized to meet the objectives of Title I of the 1974 Housing Act. The data on which this report is based is preliminary; hence, the report does not fully represent the experiences of the potential CDBG grant recipients (who number in excess of 1,200). The report does, however, describe the early experiences of a number of localities and provides an early indication of the progress of recipients and of potential problems for HUD in the management of the program.

On December 31, 1975, pursuant to Section 113 of the 1974 Housing Act, the Secretary of Housing and Urban Development forwarded to Congress the *Community Development Block Grant First Annual Report.* Title I of the Act consolidated seven existing categorical grant-in-aid programs administered by HUD (Urban Renewal, Model Cities, Water and Sewer, Open Space, Neighborhood Facilities, Rehabilitation Loan, Public Facilities Loan). The report discusses progress made in accomplishing the CDBG program's objectives, and the use of the appropriation for FY 1975 of $2.55 billion for CDBG. Since there had not been time for actual implementation of the Community Development programs, the report is necessarily based on recipients' planned program objectives and use of funds.

In an effort to provide timely and useful information to HUD managers and to our program participants, the Community Planning and Development continues to prepare special reports. In June 1975, CPD's Office of Evaluation published a report entitled *A Guide for Local Evaluation.* The *Supplemental Readings,* included in the report, were originally developed to supplement three-day seminars in evaluation techniques offered to staff personnel of HUD and local government agencies by the Office of Evaluation. At the suggestion of former workshop participants, the *Supplemental Readings* have been revised slightly to serve as a guide to local governments in managing and conducting their own evaluation. This approach to evaluation is intended to introduce the elements of a useful evaluation system without limiting flexibility to develop skills and methodology to suit individual needs and capacity.

CPD's Office of Evaluation also published, in 1975, three reports dealing with urban renewal:

(1) *Evaluating Local Urban Renewal Projects: A Simplified Manual;*
(2) *The Future of Local Urban Development; A Guide for Community Policy Makers;*
(3) *Guidelines for Urban Renewal Land Disposition.*

Evaluating Local Urban Renewal Projects; A Simplified Manual is the first of the three reports and provides suggestions for a procedure to determine whether urban renewal projects should be continued unchanged, altered, or terminated. It also indicates possible costs and benefits for local governments to consider in making future urban renewal decisions. The *Manual* is based on a two-year study of more than 70 urban renewal projects in 22 cities.

The Future of Local Urban Development; A Guide for Community Policy Makers is the second report. It provides an indication of the success of previous urban renewal activities, and how urban renewal may be used to deal with problems presently facing America's cities. The *Guide* also discusses the types of development which are most appropriate for neighborhoods in various stages of decline.

Guidelines for Urban Renewal Land Disposition is the third report. It provides assistance to local officials in marketing land in urban renewal projects. It identifies the various factors which cause delays or which accelerate marketing, and contains detailed suggestions for dealing with the 20 major problem areas of land disposition.

For further information, contact: Elsa S. Freeman, Director, Library Division, Department of Housing and Urban Development, Washington, D.C. 20410, (202) 755-6376.

OFFICE OF INTERNATIONAL AFFAIRS

The Office of International Affairs continued its active role in the transfer of foreign technical information about housing and urban development. Since the major interest of the office in procuring foreign information is to provide such information to HUD and to the U.S. housing industry, efforts continued in the collection of foreign information relating to the priorities established by HUD.

Publication of the four HUD International Series by the Office of International Affairs continued. These are: The Information Series, The Information Sources Series, Country Profiles, and the Special Reports Series.

The Information Series contains feature articles, calendars of international events of significance to housing and urban affairs, business opportunities, technical articles, and book reviews. The Information Sources Series contains bibliographies of two different types: (1) bibliographies on single subjects from foreign sources; and (2) accession lists containing bibliographic data on material received by HUD from abroad, without restrictions on subject matter. Country Profiles consists of detailed studies of urban development in a particular country. Special Reports are in-depth studies of single subjects. These reports are available from HUD without charge. Computerization of the foreign information retrieval system, which provides bibliographic printouts of information source for researchers, continued and was expanded.

HUD has agreements for the exchange of technical information with eight other countries: France, Iran, Japan, Spain, Sweden, U.S.S.R., United Kingdom, and West Germany. The two most recent agreements are the U.S.-U.S.S.R. Agreement on Housing and Other Construction, and the U.S.-Iran Agreement. Under the U.S.-U.S.S.R. Agreement, working groups have been established on both sides in the six areas covered by the Agreement: (1) building design and construction management, (2) building materials and components, (3) building for extreme climates and unusual geological conditions, (4) construction in seismic areas, (5) industrialized building systems and utilities, and (6) new towns. Information and visit exchanges by specialized teams for each subject area are planned for 1976. Under the U.S.-Iran Agreement, in response to the Iranian Government's request for aid in supplying housing for Iran, a U.S.-Iran Working Group on Housing was established in April 1975. Iranian teams have visited the U.S., and U.S. teams have visited Iran, to exchange information on prefabricated housing and on modes of supplying housing from the private sector which is compatible with Iranian life styles and customs.

The Office expanded its effort to assist U.S. businessmen who are interested in overseas trade. Efforts are being made to develop an understanding of the ways in which the U.S. housing industry can contribute to meeting international housing and community development needs. A HUD International Special Report, entitled *Services Available to HUD-Related Businesses in International Trade,* which describes information sources available to businessmen, was published.

One of the major efforts of the Office will be its contribution to the HABITAT Conference, which will be sponsored by the United Nations and will take place in Vancouver, British Columbia, May 31-June 11, 1976. The first world conference ever held to address the problems of urbanization, HABITAT will focus attention on the massive problems connected with man's migration to the city. HUD has assisted in the preparation of films, publications, and other planning as necessary, and is assisting in both the domestic and international preparations for the HABITAT Conference. In this connection, HUD has established the HABITAT National Center to stimulate public awareness and discussion of the purposes and issues of HABITAT. The Office of International Affairs will cooperate with the HABITAT Center to the fullest extent possible.

During 1975, the United Nations Environmental Program (UNEP) established the International Referral Service (IRS) to address worldwide information needs in the broad field of the environment. EPA has been designated the National Focal Point for the U.S. activity. HUD's Office of International Affairs is the subfocal point in the area of human settlements, and has the responsibility for identifying the major sources of data. The Office will provide these data to IRS headquarters in Nairobi, Kenya, through EPA.

For further information, contact: T. Callaway, Director of Technology and Documentation Division, Office of International Affairs, Department of Housing and Urban Development, Washington, D.C. 20410, (202) 755-5770.

POLICY, DEVELOPMENT, AND RESEARCH

Current and accurate technical, economic, and financial data pertaining to housing and urban development are essential to informed decision-making by both consumers and industry, and to the formulation of policy and the development, management, and evaluation of programs by Federal, state, and local government. The data collected must be relevant and available to those who need it.

One project in this area is the Annual Housing Survey, undertaken to measure changes in the U.S. housing inventory and to compile data on the physical condition of housing units and the characteristics of occupants in both urban and rural areas. Data on the status of the housing inventory and its occupants are compiled and published annually. Cross-sectional characteristics and temporal changes are reported for inventory additions and losses, tenure and vacancies, condition and functioning of the structure and its mechanical systems, economic and sociological status of occupants, and the relationship between occupants and the types of housing units.

An information service is planned for statistics emanating from the Experimental Housing Allowance Program. This experimental program was established to test the feasibility of providing direct cash assistance to needy families to enable them to obtain decent, safe, and sanitary housing. Data from the experiment will be available to research groups for study and analysis.

In cooperation with ERDA, a data bank is being established for the collection and dissemination of information on the solar heating and cooling of residences. This data bank will be compatible with ERDA's data systems, and will contain detailed information on the results of the Solar Heating and Cooling Demonstration Program, which is administered by HUD. Data will be suitably packaged for each type of potential user (e.g., consumer, builder, developer), in order to provide the widest possible dissemination and utilization of results.

Plans are being formulated for the development of a dissemination effort for the elimination of the lead-based paint hazard. The focus of the effort will be information and data from HUD's lead-based paint research program, including those techniques of hazard removal that are addressed by the program. The effort being developed will include a clearinghouse.

A comprehensive data bank is also under development for the identification, cataloging, abstracting, and publication of reports resulting from all HUD-sponsored research activities. The software employed is that of NASA's RECON system. A variety of publications are contemplated, including a complete compendium of major research documents.

For further information, contact: Elsa S. Freeman, Director, Library Division, Department of Housing and Urban Development, Washington, D.C. 20410, (202) 755-6376.

THE HABITAT NATIONAL CENTER–HORIZONS ON DISPLAY

Horizons on Display is a National Bicentennial program sponsored jointly by HUD and The American Revolution Bicentennial Administration. The program recognizes 200 examples of creative problem-solving in communities in the U.S., and is a Bicentennial tribute to community development. The program has developed a growing data base covering a wide range of community development projects. Files exist on the 200 projects included in the program, as one of the program's goals is an information-exchange capability. A Horizons catalog provides communities with a guide to various ideas that are operational and which could serve as models for projects in their own cities and states.

During the development of Horizons on Display, over 1,000 community development programs were suggested for inclusion; information on these programs is available at the Horizons office. New program information is being developed concurrently. All this material provides the basis for the clearinghouse function of the Horizons on Display program.

The Habitat Center also has a library of Habitat-related materials and films, and acts as a national clearinghouse for Habitat information.

For further information, contact: Habitat National Center, 1111 18th Street, N.W., Washington, D.C. 20036, (202) 254-7515.

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

The *Minerals Yearbook* is a three-volume annual statistical publication of the Bureau of Mines in which production, consumption, and trade data on minerals, metals, and fuels are compiled. A narrative summary of significant developments is included in each chapter. Volume I presents domestic and world data on a commodity basis; Volume II presents the data on a state-by-state basis; and Volume III contains data on foreign countries. The *Yearbook* may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Commodity Data Summaries is the earliest Government publication to furnish coordinated production, consumption, and trade estimates for the year immediately preceeding on 95 mineral, metal, and fuel commodities. These summaries are available free of charge from Bureau of Mines, 4800 Forbes Avenue, Pittsburgh, Pennsylvania 15213.

Minerals & Materials, A Monthly Survey presents current production, consumption, foreign trade inventory, and price data on 18 significant mineral and fuel commodities. This periodical serves to maintain, on a current basis, data appearing in the *Minerals Yearbook* and *Commodity Data Summaries. Minerals & Materials* is available from the Bureau of Mines, free of charge.

The Bureau's two major information storage and retrieval systems–Minerals Availability System (MAS) and Fuels Availability System (FAS)–are being modified for operation under the Burroughs Corporation's DMS2 data base management system. This will facilitate more timely and less costly information retrieval by a larger user community than was possible under the former control system.

Working with the Federal Energy Administration, the Bureau developed an FAS system for petroleum to meet joint reporting needs. Agreement has been reached to develop a similar system for coal. In a cooperative venture with the U.S. Geological Survey, the Bureau initiated a minerals and energy related data base utilizing the INFONET computer time-sharing system.

Bureau officials have met with those of other countries in an effort to establish an international clearinghouse for energy information under the auspices of the International Energy Agency.

All of the Bureau's significant research findings are reported as Reports of Investigation. These reports include those projects conducted as intramural effort and those that are primarily conducted by universities and other organizations under contract. The results of some research projects are also reported in scientific and engineering journals. Economic studies of various mineral commodities, including fossil fuels, are published as Information Circulars, as are studies on the cost of mining or processing a commodity. The Bureau annually publishes a report of ongoing and completed projects which contains a bibliography of all publications of that year and the two previous years (e.g., Reports of Investigations, Information Circulars, outside articles). This review summarizes significant accomplishments and projects, and supplements the annual catalog of publications. The 1975 review is entitled *Research 75*. Reports of studies of limited interest are placed in several locations as open-file reports. Such open-file reports are announced in press releases; they are not included in the annual bibliography.

Every five years, the Bureau publishes *Mineral Facts and Problems*, which serves as an encyclopedia of technology for the mining and processing of the major metals and minerals. This publication does not supplant the *Minerals Yearbook* since technology is stressed rather than production and consumption data. Standard Industrial Classification, new tables, and the inclusion of standard resources contribute to the usefulness of the publication.

Some reports are unscheduled and do not fit into any of the previously mentioned publications. These include special reports such as *A New Industrial Power with a Strong Mineral Base* (the Peoples Republic of China), *Energy Through the Year 2000*, and a booklet on African minerals.

For additional information, contact: Mr. W.E. Warnke, Bureau of Mines, Department of the Interior, 2401 E Street, N.W., Washington, D.C. 20241, (202) 634-1308.

BUREAU OF OUTDOOR RECREATION

The Bureau of Outdoor Recreation operates the Outdoor Recreation Technical Assistance Clearinghouse. This program consists of a data base of technical materials, including Federal, state, and local laws; technical publications and recreation research reports; a quarterly report to recreation professionals, entitled *Outdoor Recreation Action*; and an indexing-retrieval system designed to locate programs, research, and technical materials pertaining to some 35 recreation subjects.

Individuals or organizations wishing to use the clearinghouse should request information by subject, giving specific details of their need. The requester receives copies of available Bureau of Outdoor Recreation publications, a list of other materials with abstracts of their contents, identification of Government or private sources of data and expertise on the particular problem posed, and, when funds and staff permit, direct project assistance by recreation professionals. There is no charge for the service.

The Bureau's periodical, *Outdoor Recreation Action*, reports major Federal, state, local and private outdoor recreation and related environmental quality actions. This publication provides mass distribution of the best materials available in the Outdoor Recreation Technical Assistance Clearinghouse. The *Action* Reports are available free to Government agencies and officials; private organizations and individuals may subscribe prepaid from the Superintendent of Documents.

For additional information, contact: Margaret Stelmak, Bureau of Outdoor Recreation, Department of the Interior, Washington, D.C. 20240, (202) 343-7751.

BUREAU OF RECLAMATION

The Bureau of Reclamation sustains a substantial technical information activity designed to meet its in-house requirements and to contribute to the body of knowledge in the field of water-resource development. Output includes design standards, manuals, monographs, pamphlets, research reports, and brochures. The Bureau is also becoming more involved in the audiovisual media, i.e., preparing slide shows, exhibits, and displays. Reclamation provides special library-type services to employees at its Engineering and Research Center in Denver, Colorado, and at its regional and other offices throughout the 17 Western States. Increasing use is also being made of several data bases to assist in the information-retrieval process.

The Bureau of Reclamation published its eighth revised edition of the *Concrete Manual* in 1975, a manual for the control of concrete construction with worldwide distribution and which has been translated into three foreign languages. Also issued during the year were 18 reports in the Bureau's REC-ERC and GR Report Series, presenting the results of research studies undertaken by the Bureau's Division of General Research.

A biannually published catalog, *Publications for Sale*, lists technical water resource publications of the Bureau which are available to the public from GPO and the Bureau's Engineering and Research Center in Denver.

An exchange program for technical information pertaining to water resource development is maintained by the Bureau of Reclamation. Some 220 Government agencies, academic institutions, and other scientific organizations in 52 countries are involved in the program, and new foreign participants are added to the program each year.

For additional information, contact: Harley J. Warren, Chief, Technical Services and Publications Branch, Bureau of Reclamation, Department of the Interior, Room 490, Building 67, Denver Federal Center, P.O. Box 25007, Denver, Colorado 80225, (303) 234-3022.

MINING ENFORCEMENT AND SAFETY ADMINISTRATION

The Mining Enforcement and Safety Administration is heavily committed to scientific studies to enhance health and safety in American mines. These studies come in the form of statistical analyses, equipment testing, and studies of environmental factors influencing health and safety in both surface and underground mining.

Two significant scientific testing operations were initiated in 1975. The first was the creation of the Electrical Testing Project, with its attached Illumination Laboratory. The project will handle the testing and evaluation of electric power distribution systems, illumination systems, and electrically powered machinery used in mines. The Illumination Laboratory is capable of simulating mining situations with mock-up mining equipment to test illumination under such conditions.

The second operation was the establishment of the Acoustical Calibration facility to measure and calibrate noise testing equipment used by MESA inspectors in the performance of their jobs.

A joint two-year mine environmental and medical study with the National Institute of Occupational Safety and Health (NIOSH), Department of Health, Education, and Welfare, was implemented in late 1975. The study, covering 19 mines with 7,000 miners, aims at establishing a definitive correlation between the mine environment and the miner's health.

A semiannual listing of the publications of the Mining Enforcement and Safety Administration is available at MESA Office of Information, Ballston Tower No. 3, 4015 Wilson Boulevard, Arlington, Virginia 22203. These publications are as follows:

1. **MESA Safety Reviews are statistical summaries of fatalities, injuries, and fatality and injury frequency rates in the coal mining, metals, nonmetals, stone, and sand and gravel industries. Copies may be obtained from MESA, Office of Information.**
2. **MESA Instruction Guides contain brief written instructions in the fields of health and safety to miners. They may be obtained by writing MESA, Office of Information.**
3. MESA Pocket Guides are booklets given to participants who have completed safety training courses, covering the same material as refresher courses. They may be obtained from MESA, Office of Information.
4. Informational Reports (IR's) include engineering studies, measurements, verification studies, casualty causation statistical studies, and a variety of other studies in the area of mining health and safety. Twenty-five such IR's were published in 1975. They may be obtained from MESA, Office of Information.
5. Safety Manuals are in-depth studies of health and safety problems faced in various mining situations. They are written in nontechnical layman's language. Copies may be obtained from Superintendent of Documents.
6. Health and Safety Reports are analyses of fatal accidents, illustrated, with recommendations on the prevention of such accidents. Copies may be obtained from the Superintendent of Documents.
7. Open File Reports encompass special studies in fields which might affect the health and safety of miners. They are available for inspection during working hours at MESA Headquarters. Some Open File Reports are available for purchase from NTIS, Springfield, Virginia 22161.

In addition to the above listed publications, The Coal Mine Health and Safety activity, the Metal and Nonmetal Mine Health and Safety activity, and the Technical Support activity prepare annual reports on the functioning of these sections of MESA. The work of the first two activities is given in the form of an annual report of the Secretary of the Interior. Included in these reports are listings of additional scientific studies which may not be published as IR's. Copies may be obtained from the Superintendent of Documents.

In November 1975, the Mining Enforcement and Safety Administration published the first issue of *MESA – The Magazine of Mining Health and Safety*, a new bimonthly publication devoted to health and safety problems in the mining industry. It includes the most recent listing of equipment approvals. Copies may be purchased through the Superintendent of Documents.

For further information, contact: Richard Nellius, Office of Information, Mining Enforcement and Safety Administration, Department of the Interior, Ballston Tower #3, Room 516, 4015 Wilson Blvd., Arlington, Virginia 22203, (703) 235-1452.

OFFICE OF LIBRARY AND INFORMATION SERVICES

Within the Office of Library and Information Services is the National Natural Resources Library and Information System (NNRLIS), consisting of over 400 library/information centers. The Natural Resources Library in Washington, the lead library, has approximately 800,000 volumes, 9,000 periodical titles and 7,000 serial titles. The field libraries and information centers are located throughout the country and serve the various bureaus and offices of the Department.

Subject interests include the conservation and development of natural resources, including the scientific, engineering, legal and social aspects of mining and minerals, oil, gas, and energy, land reclamation, hydroelectric and related activities, fish and wildlife management, outdoor recreation, preservation of scenic and historic sites, and administration of Indian territorial affairs.

Services offered to Department personnel include reference assistance, library material loan, document delivery, translations, referral, bibliographies and online literature searches. The Natural Resources Library has access to data bases in engineering, chemistry, agriculture, petroleum, management information and other subject areas.

Recognizing the impact of the "information explosion" on scientists and engineers, the NNRLIS came into being during 1975. It equalizes the availability of library materials and information to Department personnel regardless of organizational affiliation or geographic location, and greatly increases the scope and depth of library materials and services to users. The latter becomes increasingly important to contemporary needs, which tend to be multidisciplinary. Modern systems and technology are used to facilitate the acquisition and transfer of information; most of the modules for this system are already in place at the Natural Resources Library. In-place systems include document delivery, online search services, automated acquisition system and computer-assisted cataloging of books. In the field, some modules are being upgraded, while others are under development.

An integral part of information transfer is close working relationships with other sources of information. The Office cooperates with numerous other Government agencies in the information field.

For additional information, contact: Mary A. Huffer, The Office of Library and Information Services, Department of the Interior, Washington, D.C. 20240, (202) 343-5821.

OFFICE OF WATER RESEARCH AND TECHNOLOGY

The Office of Water Research and Technology (OWRT) was created when the Office of Resources Research and the Office of Saline Water were consolidated under the Assistant Secretary for Land and Water Resources, by Order No. 2966, of the Secretary of the Interior, July 26, 1974. OWRT provides a broader-based organization for the conduct of water resources research and development programs, and stimulates and encourages programs for the conduct of research in all fields of water resources and scientific information dissemination activities.

WATER RESOURCES SCIENTIFIC INFORMATION CENTER

The Water Resources Scientific Information Center (WRSIC) is a major organizational component of OWRT. In 1975, the WRSIC data base was expanded to include 91,784 abstracts on water resources, and was included in the ERDA/RECON system as one of the data bases available for online search and retrieval by ERDA/RECON users. Through ERDA/RECON, WRSIC users can also search some of the other data bases included in the ERDA/RECON system (in accordance with existing interagency agreements). ERDA/RECON terminals have been installed at six Interior agencies, to form the beginning of the WRSIC/RECON network; other agencies have been identified as candidates for terminals as additional user credentials are allocated.

The latest volume (No. 10) in the *Water Resources Research Catalog* series was issued, as were the following bibliographies: *A Selected Annotated Bibliography on the Analysis of Water Resource Systems, Vol. 6; Acid Mine Water; Mercury in Water, Vol. 22; Water Reuse, Vols. 3 and 4; Interstate Water Compacts; Multiobjective Water Resources Planning; Urbanization and Sedimentation, Vol. 2; PCB in Water, Vol. 2; and Irrigation Return Flow.*

For further information, contact: Raymond A. Jensen, Manager, Water Resources Scientific Information Center, Department of the Interior, Washington, D.C. 20240, (202) 343-8435.

UNITED STATES BOARD ON GEOGRAPHIC NAMES

The United States Board on Geographic Names was established in its present form in 1947 for the purpose of providing a central authority to standardize geographic names for use by Federal agencies. Comprised of representatives from nine Government agencies, the Board operates through several committees that are organized along area lines, to recommend geographic names that, when given final approval by the Secretary of the Interior, become the standard names for U.S. purposes.

The permanent committees are the Domestic Names Committee, the Foreign Names Committee, the Executive Committee, and the Publications Committee. Advisory committees are established to work on names that pose particular problems; currently, these include the Advisory Committee on Antarctic Names, the Advisory Committee on Undersea Features, and the Advisory Committee on Extraterrestrial Features. These committees meet as needed, with the exception of the Domestic Names Committee, which meets monthly. While the committees are responsible for carrying out their missions with relative independence, they conduct their affairs under general guidelines established by the Board, and report to the Board each quarter.

BGN's work is disseminated to Federal agencies and other users by means of various publications. Domestic U.S. names appear in lists which are issued quarterly; foreign names are carried in a series of some 150 gazetteers which cover foreign countries and regions, undersea areas, and Antarctica.

Staff personnel to undertake the research and production required to standardize names are provided by the U.S. Geological Survey (in the case of domestic names) and the Defense Mapping Agency (in the case of foreign names), but members of the Board serve without compensation. The agencies also furnish name information in response to inquiries from Federal and non-Federal users.

Board members (and deputy members) are appointed by the heads of their respective departments for two-year periods; the Chairman of the Board is appointed by the Secretary of the Interior. Each committee elects its respective officers.

In its work of providing Government agencies with standardized geographic names for use in documents and communications, the Board cooperates closely with both domestic and foreign standardizing bodies. BGN maintains relations with state and local organizations in the United States for the purpose of developing names and related information that conform to local usage, and engages in long-range programs with foreign and international standardizing bodies. As a result of such cooperation with its counterpart in the United Kingdom, the Board has developed a number of systems to convert non-Roman written languages to the Roman alphabet.

These systems, which are in use in many Roman-alphabet nations, have contributed significantly to the improvement of communications across language barriers. The Board is also represented in various UN organizations and by regional organizations for the purpose of standardizing names.

One of the goals of the Board is to assist other nations to establish national name-standardizing agencies. To this end, every attempt is made to provide advice and technical information to foreign authorities. In several cases, BGN gazetteers have been sent to authorities for the purpose of providing sources of name information which can be used as the basis for national name documents. This action, of course, suggests that BGN has been able to produce name data in certain countries superior to those developed in other countries.

While geographic name information developed by BGN is designed chiefly for official United States use, its publications and/file information have been extensively used by educational institutions, commercial publishers, and researchers in various scientific fields, both in this country and elsewhere. Gazetteers and lists of domestic names have been made available free of charge to qualified users.

BGN does not make decisions that are contrary to local usage. Within the United States, the Board normally engages in making decisions only when there is a conflict in available evidence, or when a name is proposed for a feature that has no name.

For information on U.S. domestic names, contact: Donald J. Orth, Executive Secretary for Domestic Geographic Names, National Center, Mail Stop 523, Reston, Virginia 22092, (703) 860-6261.

Inquiries about BGN and about foreign geographic names should be directed to Richard R. Randall, Executive Secretary, United States Board on Geographic Names, Defense Mapping Agency, Building 56, U.S. Naval Observatory, Washington, D.C. 20305, (202) 254-4453.

U.S. GEOLOGICAL SURVEY

In addition to the traditional information services provided by the Geological Survey Library and Public Inquiries Offices, the Geological Survey operates a number of STI programs which are aimed at encouraging the greatest possible use of existing earth science data, in order to avoid costly duplication of data collection efforts. With the exception of the EROS Data Center, which moved into permanent facilities at Sioux Falls, South Dakota, in early 1974, the Geological Survey Library, the National Water Data Exchange, the National Cartographic Information Center, and other components of the Survey's STI programs are housed at the Geological Survey's new National Center in Reston, Virginia.

For additional information, contact: Frank Forrester, Information Officer, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 119, Reston, Virginia 22092, (703) 860-7444.

EARTH RESOURCES OBSERVATION SYSTEM

The first earth resources satellite for the Earth Resources Observation System (EROS), launched in July 1972, was joined by a second satellite in January 1975. The first satellite is still functioning but, with the failure of its tape recorder, has lost its ability to transmit data outside the range of a receiving station. Receiving stations are located in Canada and Brazil, with further stations planned. The second satellite is in the same polar orbit but nine days behind the first; thus, any spot in sight of a receiving station can be imaged once every nine days, and outside the range of receiving stations, once every 18 days. With the launch of the second satellite, the satellite names were changed from ERTS 1 and 2, to Landsat 1 and 2. During the past year, considerable advances were made in the use of digitized tapes in enhancing the data of the images. In 1975, the EROS Data Center archives included approximately 740,000 items of ERTS and Skylab imagery, 1.5 million items of NASA aircraft imagery, and 3.5 million items of conventional holdings.

The EROS program provides the user with reproductions of imagery acquired by Landsat and of imagery and aerial photography acquired by Skylab and by Geological Survey and NASA aircraft. The program also provides training and user assistance in the interpretation and use of remote sensing data at Application Assistance Facilities operated at the following locations: EROS Data Center, Sioux Falls, South Dakota; Bay St. Louis, Mississippi; Phoenix, Arizona; Menlo Park, California; Denver, Colorado; Reston, Virginia; and the Canal Zone, Panama. At these facilities, the public may view microfilm of imagery and receive assistance in the techniques of applying the data to resource problems.

For further information, contact: Charles Withington, EROS Program, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 730, Reston, Virginia 22092, (703) 860-7860.

GEOGRAPHIC INFORMATION SYSTEM

The Geographic Information System (GIS) provides the user with machine-readable data on land use, land cover, census tracts, drainage basins, political boundaries, and Federal land ownership, at a scale of 1:350,000.

Computer programs are being developed to edit and correct the digitized map data; convert the data from polygon to grid format; to compile land-use statistics by counties, states, river basins and subbasins, census tracts, and other geographic units; and to produce cartographic products for publication.

The data in GIS is derived from the Geological Survey's land-use mapping program. At the end of 1975, approximately 11% of the United States had been mapped, using a land-use classification system developed by the Geological Survey in conjunction with other Federal agencies, several states, and other users of land-use information. By the end of 1976, 13% will have been mapped. It is planned to obtain complete coverage of the country by mid-1982 and to update the data base as necessary. As repeated coverage of an area is available, statistics about land-use trends will become available.

For further information, contact: Dr. William B. Mitchell, Geographic Information System, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 710, Reston, Virginia 22092, (703) 860-6341.

NATIONAL CARTOGRAPHIC INFORMATION CENTER

The National Cartographic Information Center (NCIC) provides the user with information on the availability of aerial and space imagery, maps, charts, geodetic data, and related digitized cartographic data produced by Federal agencies, selected state and local agencies, and some private sources. Information about the status of ongoing cartographic data collection efforts is also available. When fully operational, NCIC will provide central ordering services for many of the products mentioned above.

NCIC was established in July, 1974, using the former Map Information Office as a nucleus, in response to the growing need for a central information service to provide users with information on the availability of the large volumes of cartographic data produced by Federal and state agencies and the private sector. During the next two years, NCIC will increase its information-holding to include most Federal cartographic data. A major task will be to develop a data base for maps. This data base will make extensive use of microfilm.

For further information, contact: Max Voight, NCIC, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 507, Reston, Virginia 22092, (703) 860-6045.

NATIONAL WATER DATA EXCHANGE

The National Water Data Exchange (NAWDEX) has been established to assist users in locating and acquiring water data that is available from both Federal and non-Federal organizations. Limited assistance is now available through the NAWDEX Program Office, located at the Geological Survey's National Center in Reston, Virginia. More extensive services will be provided in late 1976 through Local Assistance Centers established in the Water Resources Division's 46 district offices and in field offices of NAWDEX member organizations located throughout the country.

Computerized files are currently being developed for a Water Data Sources Directory and a Master Water Data Index. The Data Sources Directory will identify the organizations from which water data are available, the types of data available, and the locations from which data may be obtained. The Master Water Data Index will identify individual sites for which water data are available, their location, and the types of data that are available. These files will initially contain information contributed by 19 Federal agencies and more than 300 non-Federal organizations.

All water-oriented organizations are encouraged to become members of NAWDEX. Membership is voluntary and involves no cost to the member.

For further information, contact: Melvin D. Edwards, National Water Data Exchange Program Office, U.S. Geological Survey, Department of the Interior, 421 National Center, Reston, Virginia 22092, (703) 860-6031.

NATIONAL WATER DATA STORAGE AND RETRIEVAL SYSTEM

Water data stored in the National Water Data Storage and Retrieval System are available to users upon demand in either machine-readable form or hard copy (e.g., computer printouts, publications). Computer programs are also available to produce a variety of hydrologic analyses, and tabular and graphic presentations of the available data.

The U.S. Geological Survey, as the principal Federal water-data collection agency, began collecting background information on the Nation's water resources before 1900. Over the years, data have been assembled from more than 130,000 sites throughout the United States. The Storage and Retrieval System contains more than 350,000 peak-flow observations; 340,000 station-years of daily streamflow values, water levels, and water quality observations; and the results of over 850,000 chemical analyses. Currently, the system annually receives data from more than 10,000 stations, 1,300 lakes and reservoirs, 4,300 water-quality stations, 4,100 temperature-measurement sites, 880 sediment stations, and 2,500 key wells. Additional data from many other sites are also added to the system as a result of approximately 1,500 water-resources investigations currently in progress.

Work in 1975 involved a major effort to improve the storage and retrieval capabilities for ground-water site inventory data. Contract activities are currently underway for the design and development of this part of the overall system. This facility will allow for the storage of large volumes of data relative to the physical, topographic, hydrologic, and geologic characteristics of ground-water sites. It is planned that this subsystem will be made available for national implementation in January 1976.

For further information, contact: George W. Whetstone, Water Resources Division, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 600, Reston, Virginia 22092, (703) 860-7524.

OUTER CONTINENTAL SHELF GEOLOGICAL AND GEOPHYSICAL OPEN-FILE DATA

Certain types of geological and geophysical data are released to the Outer Continental Shelf Geological and Geophysical Open-File in the regional conservation managers' offices at Metairie, Louisiana, and Menlo Park, California. These data include: (a) well logs of holes drilled on all Outer Continental Shelf (OCS) Federal leases which have expired; (b) nonproprietary information on all OCS Federal wells, including operator and well name, surface location, and other material; (c) exclusive high resolution geophysical record sections and shotpoint or trackline maps on reproducible bases.

The Geological Survey has open-filed well logs on expired OCS leases since they began to expire, and, as a matter of practice, has released seismic data that has been gathered exclusively for use by the Government. During 1974, approximately 12,800 line miles of nonproprietary high-resolution geophysical data from the Gulf of Mexico were released.

During 1975 and 1976, high-resolution seismic data are being acquired and released for selected areas of offshore Alaska, Southern California, the Atlantic Coast, and the Gulf of Mexico.

The results of Continental Offshore Stratigraphic Tests (COSTs) are released as open-file reports. The COST program is aimed at obtaining scientific data about the geology of the Continental Shelf and its potential resources. Tests are drilled off-structure and are located to provide the best and most complete geologic and stratigraphic information.

For further information, contact: Russel G. Wayland, Conservation Division, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 600, Reston, Virginia 22092, (703) 860-7524.

RESOURCES AND LAND INVESTIGATION PROGRAM

The Resources and Land Investigation (RALI) Program is a program of the Department of the Interior that is designed to assist Federal, state, and local land-use planners to more effectively utilize natural resources information. Currently, RALI is sponsoring the development of methodological guidebooks for:

- designating critical environmental areas;
- listing and evaluating state land and resource inventory systems;
- assessing the environmental consequences of energy-related actions;
- evaluating pipeline transmission and multi-use corridors;
- assessing offshore impacts related to OCS oil and gas development;
- state programs for level surface mining reclamation.

RALI will continue to sponsor the development of methodological guidebooks in appropriate fields, as the need becomes apparent.

In 1976, RALI will establish a clearinghouse to compile and disseminate directories, catalogs, and bibliographies on resource and land information and on research of concern to land and resource planners and decision makers at all levels of government. RALI will also conduct applied research to: (1) develop the scientific and technical "tools" to translate, interpret, display, and utilize land and natural resource data for planning and decision making; and (2) provide technical advice, coordination, and support to state agencies in the cooperative development and utilization of new methodologies and technologies.

For further information, contact: J. Ronald Jones, RALI, U.S. Geological Survey, Department of the Interior, National Center, Mail Stop 750, Reston, Virginia 22092, (703) 860-6717.

DEPARTMENT OF STATE

AGENCY FOR INTERNATIONAL DEVELOPMENT

The technical information activities which the Agency for International Development undertook during calendar year 1975 fall into three categories:

- –those associated with the Planning, Budgeting, Accounting, and Reporting (PBAR) internal management system;
- –those recommended by the AID Library and Information Retrieval Task Force for the establishment of a Development Information Service,
- –those under the auspices of the Technical Assistance Bureau.

PLANNING, BUDGETING, ACCOUNTING, AND REPORTING

The information systems derived from PBAR are:

(1) Country Program Data Bank (CPDB)
(2) Economic and Social Data Bank (ESDB)
(3) Project Accounting Information System (PAIS)
(4) Project Performance Tracking (PPT)

The Country Program Data Bank will provide a readily accessible central source for planning and budgeting information on all AID activities, and design information on all AID projects. CPDB will also facilitate the monitoring of new projects by responsible AID offices, and the preparation of budget documents such as the Congressional presentation of the budget.

The Economic and Social Data Bank will provide a readily accessible central source of economic and social data and descriptive material about those countries which AID is assisting. ESDB will also support data needs for numerous AID documents and reports and for responses to Congressional and public queries. It will also permit economic modeling.

The Project Performance Tracking System will provide for the tracking of the implementation of AID-funded activities and projects. PPT will contain information on the Critical Performance Indicators (CPIs) of AID projects and the monitoring of actions relating to those CPIs during the implementation of the project.

The Project Accounting Information System (PAIS) will provide financial data of AID projects and non-project activities for use in monitoring financial progress (i.e., planned vs. actual) and in discharging AID's financial-management responsibilities.

For further information, contact: G. Bliss, Director, Program Information and Analysis Services, Agency for International Development, Washington, D.C. 20523.

DEVELOPMENT INFORMATION SERVICE

Pursuant to recommendations by an AID task force on Library and Information Retrieval, AID is establishing a Development Information Service (DIS) that will provide information required by project designers. Its purpose is to improve the quality of AID's project design and evaluation system. DIS will integrate many existing information activities and will include an information processing, storage, and retrieval system; it will utilize information on AID's own experience in development and will also draw on "the state-of-the-art" in technical areas, relying on information systems and data banks external to AID (e.g., the UN Agencies, academic institutions, research centers).

The present AID Reference Center is a repository for documentation of AID project activities, and is to be incorporated into DIS. Abstracts of AID documents will be entered into the DIS data base.

For further information, contact: C. Ide, Director, PPC/DIS, Agency for International Development, Washington, D.C. 20523, (703) 235-1960.

TECHNICAL ASSISTANCE BUREAU

The Technical Assistance Bureau's information management system has been designed to serve as the connecting link between AID-sponsored research centers (primarily in the United States), which produce information of a specialized nature, and Third World institutions that need this information for development projects. The system insures that R&D publications are collected from TAB contractors and grantees, and that they are analyzed and cataloged as a basis for subsequent retrieval. The system also provides for permanent storage in microfiche form, from which copies may be readily produced for AID staff personnel and for national and international organizations involved in development.

The system includes the following functions and services:

- Acquisition of R&D materials and their analysis, which is essential for inputting into a automated data base.
- Production of a master microfiche of all R&D titles in the data base for document delivery and for microfiche deposit collections in key international centers.
- Announcement of a quarterly journal of abstracts and recently completed studies and publications, and a catalog printed from the data base containing R&D titles produced through TAB-sponsored research activities between 1962 and 1975 (to be issued in June 1976). The announcement would be directed especially to research and education-extension units in the developing world, national-level offices concerned with planning and utilization, AID personnel, and national and international agencies involved in development.
- Publication of periodic reports and directories which summarize R&D activities and resources (e.g., the *Directory of Institutional Resources* identifies and describes resources and services developed under 211(d) grants).
- Identification and assessment of the capability of key international centers to share in TAB information resources and to serve, through networking, as relay points within developing countries and regions.
- A computerized mailing list (ADDS), containing more than 5,500 institutions in the developing world, selected American universities, international organizations, and AID addresses. Other AID offices may add specialized mailing lists to ADDS.
- A distribution center which, during 1975, mailed 4,410 microfiche and 9,583 paper copies of R&D materials to AID personnel and to individuals, organizations, and government agencies in the Third World countries.

For further information, contact: J. Hafenrichter, Agency for International Development, Washington, D.C. 20523, (202) 632-9031.

DEPARTMENT OF TRANSPORTATION

In 1975, the Department of Transportation (DOT) continued to implement the recommendations of the major Federal scientific and technical information (STI) studies (*A Review of Federal Agency Responses to Selected Recommendations Made in Three Major Scientific and Technical Information Reports*, Science Advisor's *Ad Hoc* Task Group on Federal Agency STI Review, April 30, 1975). DOT established and maintains a strong focal point for STI at the Secretarial level, and pursues a policy of using non-Governmental STI sources whenever possible in the furthering of its missions. The organization and dissemination of the socioeconomic, technical, and other information pertinent to transportation continue as an important part of DOT's program.

Several events in 1975 demonstrated DOT's continuing concern with STI management and dissemination. One of these was the issuance of a long-awaited Statement of National Transportation Policy. Issued by Secretary of Transportation Coleman as a platform for further dialogue, the statement declares that the value of research, development, and demonstration (RD&D) expenditures is ultimately "realized in their application in Government operations or in the private sector" (*A Statement of National Transportation Policy by the Secretary of Transportation*, Washington, D.C., September 17, 1975). Consequently, effective dissemination of information about new technology, community demonstration projects, and financial incentives to utilize cost-effective, energy-efficient technology are "essential elements of a complete RD&D program" (*ibid*, Secretary's statement. September 17, 1975).

This policy was reiterated when the Secretary issued another document, entitled *Technology Sharing: A Guide to Assistance in Obtaining and Using Research, Development and Demonstration Outputs*, U.S. Department of Transportation, Washington, D.C., January 1976. In displaying the varied mechanisms through which the results of the Federal RD&D efforts are disseminated to those organizations responsible for the implementation of solutions and improvements in transportation, the Secretary has also defined their importance in the execution of the Departmental mission.

1975 was also the first year of the test for the National Network of Transportation Research Information Services (TRISNET). Still in its developmental state, TRISNET was meticulously reviewed by the Deputy Secretary and the Transportation Systems Acquisition Review Council. It emerged from this review as a formally approved mechanism for the effective dissemination of information and the linking of transportation information service centers to form a system which should eventually provide one-stop service for most of the information needs of the transportation-oriented technologists and planners.

As a result of this review, the network design concepts have been incorporated into the Departmental development plans. The accepted design is essentially that recommended by the TRIS Committee of the National Academy of Sciences (*Design Concepts for the National Network of Transportation Research Information Services [TRISNET]: A Report of the Committee on Transportation Research Information Systems*, National Academy of Sciences, Washington, D.C., July 1975 [PB 245311]). The design calls for a system of four components, each containing one or more elements:

(1) Abstracting and Indexing Services (AIS) – to produce references to RD&D (planned, ongoing, and completed) project articles, reports, computer programs, numerical/statistical tables, directories, and other types of information.

(2) Online Access – to provide access to AIS references.

(3) Document Delivery Services – to provide information users with full text documents and data bases whose references are carried by the AIS and Online components.

(4) Communication and Coordination – consisting of three elements: A TRISNET Advisory Committee, a TRISNET Managers Council, and a TRISNET Secretariat. The Secretariat is a focal point for communication among the TRISNET elements, and a principal point for the contact for the uninitiated users.

Also in 1975, several components of the network were strengthened as the core of the network. The Highway Research Information Service (HRIS) was declared the principal source of highway-oriented information support and a principal source of information for state-supported Highway Planning and Research (HP&R) activities. Similarly, the Railroad Research Information Service (RRIS), sponsored by the Federal Railroad Administration (FRA), became a major and influential component of the FRA's RD&D program and a window to foreign accomplishments in railroad technology.

The Maritime Research Information Service (MRIS), sponsored and funded by the Maritime Administration (MARAD) of the Department of Commerce, was identified as the core member for maritime transportation information. The Air Transport Research Information Service (ATRIS) was formally declared a funded program of the FAA, and the Urban Mass Transportation Administration (UMTA) has begun consideration of the desirable scope and characteristics of a new information service for mass transit. The Highway Safety Literature System, established and funded by the National Highway Traffic Safety Administration (NHTSA), was fully incorporated into the common data base of the TRIS-ON-LINE Service. A new Center for Transportation Tunnelling Information was established at Purdue University's Center for Information and Numerical Data Analysis (CINDAS).

The interagency agreement between NTIS and DOT resulted in the prototype operation of the first centralized DOT Technical Documents Center (DOT-TDC). The Center will operate as one of the elements of the TRISNET Document Delivery Services. Under the terms of this cost-reimbursable agreement, NTIS serves as a formal depository and archival service for DOT technical documents, and provides an abstracting and indexing service for all transportation-oriented, Federally-sponsored technical literature.

TRIS-ON-LINE is a component of (and often confused with) TRISNET. It is a computerized service that provides direct user access to TRISNET's common data base. TRIS-ON-LINE was declared operational in 1975, and its day-to-day management transferred from the Office of the Secretary to the Transportation Systems Center (TSC). TSC, a major RD&D organization of the Department of Transportation, is located in Cambridge, Massachusetts, and is responsible for the integration of TRIS-ON-LINE into the DOT technology-sharing activities.

New areas of concern have been identified and will represent new aspects of future DOT scientific and technical information activities. One such area concerns numerical and statistical transportation data. More precisely, emphasis will be placed on the development of a capability of access to and use of many Federal, state, and private data banks by transportation policy makers, planners, analysts, and technologists. In another area, the program emphasis will shift to the access and use of computerized analysis and decision models. Both efforts will be fully integrated with the previous TRISNET and technology-sharing efforts.

For further information, contact: Dr. A. Hoshovsky, Office of the Secretary (TST-25), Department of Transportation, Washington, D.C. 20590, (202) 426-0975.

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

ENERGY REORGANIZATION ACT OF 1974

Under provisions of the Energy Reorganization Act of 1974, the Atomic Energy Commission (AEC) was abolished and two new agencies were established:

–The Energy Research and Development Administration (ERDA)
–The Nuclear Regulatory Commission (NRC)

The effective date of this reorganization was January 19, 1975. The AEC Office of Information Services became the Office of Public Affairs (OPA) of ERDA. OPA's STI activity consists of the Systems Development Branch, the Science Services Branch, the Technical Information Center (TIC) at Oak Ridge, Tennessee, the Technology Information Branch, and the Special Assistant for Conferences.

ENERGY INFORMATION DATA BASE

The Energy Information Data Base (EIDB) is ERDA's computerized bibliographic data base. During 1975, the expansion of EIDB was continued to provide coverage of the technical literature of the field of energy R&D. The expansion of EIDB was based on the following guidelines:

(1) To develop a mission-oriented system primarily designed to meet the R&D needs of ERDA;
(2) To build this system by making maximum use of information already available in the U.S. and abroad, acquiring this information by purchase or exchange;
(3) To seek the assistance, as appropriate, of the private sector in adapting information to ERDA's specific needs.

To achieve the major expansion of EIDB represented by the nonnuclear file, ERDA is relying heavily on existing data bases (both Government and private), and is utilizing magnetic tapes that have traditionally contained significant amounts of energy-related R&D information. Categories of the literature covered include basic research support, energy conservation, engineering, coal, oil, synthetic fuels, nuclear fission and fusion, energy storage and transmission, solar and geothermal energy, and environmental aspects of energy. ERDA's Technical Information Center has begun the compilation of retrospective data bases on coal liquification and gasification, coal desulfurization, magnetohydrodynamics (MHD), solar and geothermal energy R&D, superconductivity, and oil shale. As of December 1975, more than 17,000 items were being added monthly to EIDB. A new monthly abstracting and indexing journal, *ERDA Research Abstracts (ERA)*, was introduced to provide ready access to selected portions of EIDB.

Tapes are used, in accordance with the contractual arrangements with the respective suppliers, for the selective dissemination of information (SDI) and for standard profile search at various ERDA laboratories. ERDA libraries use the tapes for providing reference support to the operating programs. As appropriate, certain tapes are used to produce special bibliographies and are available to other organizations for producing abstract journals if needed. Printed bibliographies on coal processing, solar energy, and MHD have been produced from the data base by the Technical Information Center.

Another segment of EIDB is concerned with energy policy analysis and evaluation, economics, and energy systems. Topics related to energy conservation and forecasting are emphasized. This work is being carried out at the Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee, with additional support from the Federal Energy Administration. Publication of *Energy Abstracts for Policy Analysis*, a new abstract journal produced from EIDB, began in January 1975. Emphasis is on the policy and social science aspects of energy.

ERDA/RECON

Further development and expansion of ERDA/RECON, an online interactive information retrieval system, continued. By the end of 1975, approximately 60 terminals had access to the system. In addition to the *Nuclear Science Abstracts (NSA)* data base, the system provides access to data based on nuclear safety, energy R&D projects, toxic materials in the environment, *Water Recources Abstracts*, mercury in the environment, heated effluents, coal gasification, a number of commercially available data bases, and subsets cutting across many existing data bases (known as EIDB Level II). A large mass storage device will be installed on the host computer at ORNL in 1976. This device will provide the direct access storage needed for the expected growth of the energy information data bases.

The installation of equipment and software for dial-up access to the computer at ORNL has been installed and is now operational.

INTERNATIONAL PROGRAMS

ERDA continued to play an active role in the International Nuclear Information System (INIS), coordinated by the International Atomic Energy Agency. INIS is now fully operational and provides bibliographic coverage of the nuclear science and engineering literature generated in 45 contributing countries, as well as by 13 international organizations. The input to INIS in 1975 consisted of 65,000 items, approximately 10% of which were in machine-readable form. IAEA processes all data, merges the data, and issues four products:

(1) a magnetic tape
(2) *INIS Atomindex*, complete with indexes
(3) abstracts in microfiche form
(4) full text of nonconventional literature (also in microfiche form)

INIS now provides the major source of bibliographic coverage of foreign nuclear literature for input to ERDA's EIDB.

Nuclear Science Abstracts, the ERDA international abstract journal in nuclear science and technology, will be discontinued as of June 30, 1976, when IAEA's *INIS Atomindex* will assume its role.

ERDA continued bilateral information exchange arrangements with foreign governments in the nuclear field, and is now working out expansions of those agreements to include nonnuclear energy R&D information.

ERDA provided lead staff support to a Joint U.S./U.S.S.R. project for the development of a computer-readable format for exchanging bibliographic information.

ERDA participates in providing input to the United Nations Environmental Program's International Referral Service (UNEP/IRS) through EPA, which has been designated the U.S. National Focal Point for UNEP/IRS. ERDA's information sources are being registered with UNEP/IRS to facilitate the international transfer of environmental information.

ERDA's technical information staff has been made available to serve as experts for varying periods of time on projects and committees of UNISIST and IAEA. Such assignments contribute to the development of international information systems, which, in turn, leads to benefits for ERDA in facilitating access to foreign energy information.

INTERAGENCY COOPERATION

Certain Federal agencies with energy interests have been granted access to ERDA/RECON to meet some of their information retrieval requirements. In turn, these agencies are making available to ERDA those of their data bases which are of interest to ERDA's programs.

The Chairmanship of the Energy Research and Development Information Group (ERDIG), started by the National Science Foundation (NSF), was officially transferred to ERDA. This is an informal group established to coordinate the energy information programs among the major Federal energy agencies. Its membership consists of the managers of the STI activities of approximately 10 Federal agencies.

A feasibility study was initiated of the interconnection of ERDA/RECON, NASA/RECON, and DDC's RDT&E Online System.

In 1975, ERDA continued its participation in GIDEP. GIDEP is funded by the U.S. Government and managed by Naval Material Command. For a further description of GIDEP, see Department of Navy.

PUBLICATIONS PROGRAM

In anticipation of the phase-out of *Nuclear Science Abstracts* in 1976, a new internal publication, *ERDA Research Abstracts*, was initiated to provide monthly abstracting and indexing coverage of all scientific and technical reports, journal articles, conference papers and proceedings, books, patents, theses, and monographs originated by ERDA. Approval to make this publication publicly available was obtained from the Office of Management and Budget (OMB). In January 1975, *Energy Abstracts for Policy Analysis*, was initiated; it is a monthly abstracting and indexing journal with coverage of selected, publicly available, nontechnical literature related to energy. *Energy Abstracts* was jointly sponsored by ERDA, NSF, and FEA, and is available from GPO. In 1975, the bimonthly technical progress review, *Nuclear Safety*, became a jointly sponsored publication of ERDA and the Nuclear Regulatory Commission (NRC). The publication, *Regulatory Adjudication Issuances*, became an NRC publication, entitled *Nuclear Regulatory Commission Issuances (NRCI)*. However, under an interagency agreement, *NRCI* was composed, printed, and sold by ERDA.

ERDA LIBRARY NETWORK

The Argonne National Laboratory received ERDA support to develop a mini-computer system to provide certain centralized library services to ERDA libraries. It is also proposed to use the computer as an interface for multiplexed access to RECON.

COOPERATION WITH THE PRIVATE SECTOR

Special briefings have been provided to representatives of the information industry and nonprofit organizations involved in the dissemination of scientific information. These briefings were intended to impart a better understanding of ERDA's technical information program.

A number of data bases on tape have been purchased from commercial services for inclusion in the EIDB, and access to a number of others by subscription is being investigated. Some services are being engaged to index bibliographic data according to the ERDA Energy Thesaurus, and to provide citations in formats standardized according to the international standards used by ERDA.

TECHNOLOGY INFORMATION DISSEMINATION

The Technology Information Branch was initiated in 1975 to develop and disseminate information products pertaining to energy technologies developed by ERDA which have near-term market potential, and which would contribute to the availability of energy to the U.S. As a service in support of ERDA's commercialization program, this activity will be directed toward: (1) providing assistance in the identification of potential user communities for each specific technology, (2) repackaging information in forms that suit the needs of discrete audiences, and (3) developing new methods of dissemination. A mix of channels and media will be employed to achieve the largest audience response, including conferences, workshops, special publications, and newsletters.

CONFERENCES

The Office of Public Affairs (OPA) continued to arrange for ERDA financial support of selected scientific and technical conferences during 1975. A total of 21 conferences were supported and each resulted in a publication of proceedings.

OPA also coordinated the U.S. participation in 12 international conferences during 1975. This activity consisted of arranging with the Department of State for 550 official nominations of participants. A total of 250 papers were processed by OPA, including technical reviews prior to submission of papers abroad.

For further information, contact: T.E. Hughes, Office of Public Affairs, Energy Research and Development Administration, Washington, D.C. 20545 (301) 353-4196.

ENVIRONMENTAL PROTECTION AGENCY

AIR POLLUTION TECHNICAL INFORMATION CENTER

The Air Pollution Technical Information Center (APTIC) of EPA offers the following services:

(1) Literature searching by computer, including: (a) retrospective retrieval from the master files of more than 70,000 abstracts; (b) current awareness via selective dissemination of information (SDI) from approximately 850 additional abstracts, each month; (c) network searching via online remote terminals.

(2) A monthly abstract bulletin, *Air Pollution Abstracts,* with subject and author indexes.

(3) An inquiry/referral service regarding the identity and availability of particular technical publications dealing with air pollution.

(4) A catalog, *Air Pollution Technical Publications of the U.S. Environmental Protection Agency,* with ordering information and subject index.

(5) Bibliographies published as warranted.

Throughout 1975, extensive plans were made to free APTIC personnel for work of higher priority elsewhere in the EPA Office of Air Quality Planning and Standards, by procuring the needed effort from outside sources. At the end of 1975, a request for proposals had been distributed for this purpose.

For further information, contact: Peter Halpin, Chief, Air Pollution Technical Information Center, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, (919) 549-8411, Ext. 2751.

EPA LIBRARY SYSTEMS BRANCH

During 1975, the EPA Library System completed its effort for the Agency-wide user requirements study, and utilized the results to develop new services and to change existing services to better satisfy user requirements.

In the course of their 1975 annual meeting, the EPA librarians met with representatives of ten states in order to develop a framework for an environmental library cooperative program, in which EPA would participate with state and local agencies.

A training program in library contracting was offered to EPA librarians during 1975.

EPA's Freedom of Information Center was transferred to the Headquarters Library, and was renamed the Public Information Reference Unit.

Contract requirements have been formulated for the development of a model microform center in EPA libraries, and for the development and testing of a user education program for state and local government officials.

Interagency agreements with the State Department (for translating services) and with NTIS and NOAA are continuing. NOAA, the U.S. Patent Office, and EPA have produced a computerized listing of joint journal holdings, which is due to be issued in 1976.

EPA was designated as the National Focal Point for the International Referral Service of the United Nations Environmental Program (UNEP). The Focal Point, located organizationally under the Library Systems Branch, was officially opened on October 6, 1975. Four of the five allocated positions have been filled: the Focal Point has collected approximately 140 sources of environmental information which have been sent in machine-readable form to UNEP in Geneva and Nairobi, Kenya. The Interagency Committee for the International Referral Service continues to advise the Focal Point. Many of the participating agencies serve as subfocal points. A senior advisory committee of five members was established as an overseer group for the Focal Point's program and operations.

For further information, contact: Sarah Kadec, Chief, Library Systems Branch, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 755-0353.

OFFICE OF NOISE ABATEMENT AND CONTROL

The Office of Noise Abatement and Control (ONAC) operates the Noise Information System (NIS), which is an online information-retrieval system that is used to support the development of standards and regulations for noise emission. NIS provides the ONAC staff with an automatic filing and retrieval system for all data and information gathered during the study and development of noise emission regulations.

NIS provides the user with direct access to over 20,000 documents. Approximately 1,500 new published reports, journal articles, industry structure and data files, correspondence, and other forms of communication are input into NIS monthly. NIS has the capability for high-speed remote terminals.

Current ONAC publications are:

- *Soundings*, a summary of recent articles which have appeared in major newspapers;
- *NOISE R&D*, an overview of recent Federal procurements and contract awards for services and products related to noise;
- an author-acquisition listing (published monthly).

For further information, contact: B. Manns, Standards and Regulations Division (AW-471), Office of Noise Abatement and Control, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 557-7698.

OFFICE OF WATER PLANNING AND STANDARDS

The Office of Water Planning and Standards is responsible for the development of an overall program strategy for the abatement of water pollution, It is responsible for the development of effluent guidelines and water quality standards, exercises overall responsibility for the development of effective state and regional water quality planning and control agencies, and monitors national progress toward the achievement of water quality goals. It is responsible for the development and maintenance of a centralized water program data system, including compatible water quality, discharger, and program data files.

In 1975, effluent regulations were promulgated for more than 18 major industrial categories; when added to the 32 categories for which effluent regulations were promulgated prior to 1975, the total number of major industrial categories for which such regulations have been promulgated exceeds 50. Prior to 1975, interim grant regulations for areawide planning agencies had been approved, and 13 grants awarded; in 1975, 136 additional grants were awarded.

All 50 states received annual approval of their respective state Continuing Planning Processes in 1975. Those states and territories which had not received approval of their water quality standards prior to 1975 did so. Hence, by the end of 1975, all states and territories had received such approval. A national inventory of water quality was completed for 1975, based on reports received from 47 states.

Interim guidelines were published on September 5, 1975, for the discharge of dredged and fill materials. On December 30, 1975, four proposed regulations dealing with the management of the discharges of hazardous substances were published for public comment. Development of a final standard for marine sanitation devices progressed in 1975 (a final statement was promulgated on January 29, 1976). In 1975, EPA granted $2.1 million to states for methods and procedures to restore publicly-owned freshwater lakes, and developed new water quality criteria which have been submitted for interagency review.

The relationships of the Office of Water Planning and Standards with the private sector are primarily through provision of water quality data and information in the computerized STORET (Storage and Retrieval) system, which stores data of use in the measurement and evaluation of progress in water quality.

For further information, contact: A.J. Erickson, Assistant for Water Resources, Office of Water Planning and Standards, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 755-6867.

PESTICIDE INFORMATION CENTER

The Pesticide Information Center (PIC) consists of the Information Branch of the Technical Services Division (TSD) of the Office of Pesticide Programs (OPP). There are four functional areas within PIC: (1) Publications and Technical Literature Research Section (PTLRS); (2) Pesticide Registration Data; (3) Compendium of Registered Pesticides; (4) *Federal Register* Activities.

TECHNICAL LITERATURE

The Publications and Technical Literature Research Section (PTLRS) provides literature searches, prepares bibliographies, and supplies abstracts or full text copies, primarily in support of OPP. The center is also the focal point for the handling of reference books, periodicals, and articles that are specific to pesticides. Holdings consist of about 1,000 textbooks, manuals, and proceedings. Subscriptions to approximately 100 journals, containing approximately 60% of the total pesticide literature, are maintained, as is also an in-house collection of articles on pesticides.

PTLRS maintains a contract under which the world's literature is scanned by the contractor for articles pertinent to this collection. Selected articles are abstracted, published in *Pesticides Abstracts* (*PESTAB*), and added to the collection as the hardcopy is received. These articles, collected since the early 1950's, currently number approximately 30,000, and represent one of the more comprehensive collections in existence on pesticide toxicology and health effects.

The collection was originally cataloged in a manual card file. Recently, a computer-based catalog was developed and most of the 30,000 citations have been converted to this system. Articles are classified on the basis of concept and compound. Indexes will be produced in both hard copy and computer output microform. Indexing will be by author, classification number, and title. This system has been fully tested and will be operational early in 1976. All articles exist as classified citations, with abstracts scheduled to be entered next. All articles are being microfilmed. The indexes on COM, which provide access by compound, concept, and author, will provide sufficient specificity to replace online searches in many cases.

For further information, contact: Paul Fuschini, Chief, Publications and Technical Literature Research Section, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 426-2432.

PESTICIDE REGISTRATION DATA

Several types of data are gathered during the process of pesticide registration. The data are committed to manual and automated inventories to support registration and other activities, both within and without the Pesticide Program. These data include:

(1) Technical profile of the pesticide products;
(2) Use pattern (site/pest);
(3) Use limitations and precautionary information;
(4) Technical data submitted by the registrant in support of the registration/amendment request.

Much of this data is obtained from the product label. The balance is supplied in other forms by the registrant, or generated in the registration process itself. An automated inventory system, Pesticide Analysis Retrieval and Control System (PARCS), for label and certain other data, is being enlarged to support various search, process control, and reporting requirements, using hardcopy and COM outputs. A set of product indexes that provide access to all registered products by chemical, site, or pest, is being produced by PARCS via COM. These microfiche indexes are distributed to EPA regional personnel, and to state extension and regulatory personnel through the USDA Extension Service. Company data supplied in support of registration is classified, accessioned, and archived in a large storage facility, and will be retrieved through computer searches of the label, company data, and accession files.

For further information, contact: Charles Colledge, Chief, Information Coordination Section, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 426-8850.

COMPENDIUM OF REGISTERED PESTICIDES

One of the most widely used documents in the pesticide community is the *Compendium of Registered Pesticides.* This document is currently being assembled and published in five volumes, and is now partially available with supplements by subscriptions from GPO. The five volumes are:

Volume I *Herbicides and Plant Regulators*
Volume II *Fungicides and Nematicides*
Volume III *Insecticides, Ascaricides, Molluscicides and Antifouling Compounds*
Volume IV *Rodenticides and Mammal, Bird, and Fish Toxicants*
Volume V *Disinfectants*

The *Compendium* is based on a review and compilation of use-pattern data from approved labels, and is organized primarily by chemical, site, and pest, with suitable cross-indexing for access by site and pest. The PARCS label and site/pest files are used to provide organized resource material for use in the primary review of chemical and site groups for publication in the *Compendium.* A companion publication, the *Greensheets,* is published as a notice of the registration of new chemicals and other material of critical interest to the external pesticide community.

For further information, contact: Chief, Scientific Support Section, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 426-2447.

FEDERAL REGISTER ACTIVITIES

The *Federal Register* is the major current awareness publication for noteworthy matters that involve the daily operations of the Executive Branch of the Federal government. OPP has its own *Federal Register* activity, and currently is the only function within EPA that does. OPP submits material on a daily basis for publication in the *Register*. This material includes any rule, regulation, order, certificate, license, notice or similar instrument that is issued, prescribed, or promulgated by EPA pertaining to pesticides and developed within OPP, which is either published in the public interest or required by statute to be published. TSD provides the editorial and liaision functions as a part of its information program.

For further information, contact: Henry Bussey, Chief, Federal Register Section, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 755-4854.

SOLID WASTE INFORMATION RETRIEVAL SYSTEM

The Solid Waste Information Retrieval System (SWIRS) is a component of the Information Retrieval Services Branch of EPA, and is operated under contract. The SWIRS data base dates back to 1964, and covers the world's available literature, including patents, periodical and nonperiodical, state and local reports, national reports (where available), monographs, and conference proceedings. Prior to calendar year 1975, SWIRS was operational on the NIH computer facilities. During 1975, SWIRS was required to move from NIH, and is now operational through Optimum Systems, Inc., Rockville, Maryland. As a result of this relocation, there have been some major changes in the programming and search procedures. Previously, the search procedure involved the development of a search strategy, and a manual library search for those documents not yet processed for input. Each abstract retrieved via computer was then reviewed for direct relevance before being forwarded to the requestor with other materials resulting from the manual library search. The current procedure excludes the screening-before-release of each abstract, in an effort to reduce the cost of searches for those outside EPA requesting information. Since the system is still in the test phase, there is no information available at this time concerning the actual reduction of costs.

SWIRS offers the following services:

(1) Literature searches via computer, including the retrospective retrieval from the master files of more than 36,000 abstracts;
(2) Current awareness for in-house personnel via limited selective dissemination of information from various journals and announcement publications, which are screened by the Chief of Information Retrieval Services;
(3) A monthly abstract bulletin, *Solid Waste Management Abstracts Monthly Bulletin*, containing solid-waste abstracts from the literature, with subject and author indexes;
(4) An inquiry-referral service for the identity and availability of specific technical publications dealing with solid waste management;
(5) A solid-waste library with interlibrary loan services.

During 1975, approximately 6,000 new abstracts and documents were entered into the master file and library.

All requests for literature searches should be addressed to: SWIRS, P.O. Box 2365, Rockville, Maryland 20852.

For further information, contact: J.A. Connolly, Chief, Information Retrieval Services Branch, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 755-9153.

TECHNICAL INFORMATION SYSTEMS STUDIES

EPA decided in the autumn of 1975 to review and evaluate its automated Technical Literature Search Systems. The purpose of these systems is to provide searches and to disseminate bibliographies and abstracts for a large body of technical literature pertinent to environmental pollution. These services are provided to EPA offices, other government agencies, educational centers, businesses, and the general public. EPA's Technical Literature Search Systems are:

(1) Air Pollution Technical Information Center (APTIC),
(2) the EPA's Library System,
(3) Noise Information Service (NOISE),
(4) Pesticides Technical/Library Research System,
(5) Solid Waste Information Retrieval System (SWIRS).

While these systems generally perform the same function, they were designed differently and utilize different computing facilities. It was therefore decided that EPA's Management Information and Data Systems Division

(MIDSD) would provide the necessary leadership in conducting a broad-scale and thorough review of these systems. A contract was awarded to the Washington office of Arthur Young & Co. to conduct a 3-½-month study of these systems, and a committee representing the system managers of the respective systems was established to give overall guidance to the contractor's work.

The purpose of this contract was to: (1) perform an analysis of EPA's Technical Literature Systems, (2) determine the need for such systems, and (3) develop an action plan through which needed systems may be developed in an orderly fashion. The contract's scope of work includes a number of important areas. A detailed description is to be written about the current status of each system, from data acquisition through abstracting and dissemination of bibliographic material. A justification of the continuing long-term requirement for the systems should be made in the context of EPA's mission and legislative mandates. Finally, the most cost-effective manner of satisfying EPA's long-term requirements for these systems, and the resources required in support of these requirements, is to be determined.

The contractor had prepared two reports by the end of 1975: *System Profiles,* describing the detailed characteristics of the systems, and *Management Objective,* containing the long-term objectives and plans to be supported by the technical library search systems in each of the EPA program areas. The third report, the culmination of the contractor's efforts, will present the findings and recommendations of the contractor for improving EPA's technical information program.

For further information, contact: L. Libster, Management Information and Data Systems Division, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 755-0815.

FEDERAL ENERGY ADMINISTRATION

In 1975, the Federal Energy Administration integrated numerous data collection and processing systems, expanded the coverage of energy data by the National Energy Information Center (NEIC), and instituted joint programs with ERDA, the Department of the Interior, and the Federal Power Commission. FEA also participated in the establishment of the Federal Interagency Council on Energy Information, which provides a top-level vehicle for the acquisition and exchange of energy information throughout the Federal Government.

FEA, in fulfilling its mandate to establish and operate a national clearinghouse for energy information, has instituted in-depth reference and research services for the use of organizations (both public and private) and individuals requiring assistance in obtaining energy information not directly available from existing materials. These services are in addition to the existing referral and library services, and include the ability to produce a variety of technical publications concerning energy. For the most part, these services are provided free of charge. However, those publications which are to be retained by the user are acquired through NTIS, and a charge is associated with their acquisition.

Although FEA has actively pursued, since its inception, cooperative efforts with the Department of the Interior, and particularly with the Bureau of Mines, exigencies of the past year have necessitated the further refinement of FEA-Bureau of Mines agreements and additional joint programs with both the Department of the Interior and the Federal Power Commission. FEA and ERDA have also agreed to share facilities and other resources to accomplish those energy-information tasks that are of mutual interest.

The Federal Interagency Council on Energy Information was established in 1975 to assist those Federal agencies involved in energy-data-related activities in coordinating the development and operation of data and information systems. The Council will advise OMB and agency heads on policy issues and operations involving the collection, processing, analysis and dissemination of energy information and data by the Federal Government. The Council will consist of two groups of representatives from various Government agencies; one group (the Council) will be drawn from senior officials of participating agencies, and the other (the Technical Group) will consist of selected Government experts. The Council will have authority to determine priorities; the Technical Group will be under the Council's direction and will prepare studies describing issues and options to be considered by the Council.

For further information, contact: A.H. Linden, Jr., Deputy Assistant Administrator for Data Services, Federal Energy Administration, Room 7202, 2000 M Street, N.W., Washington, D.C. 20461, (202) 254-5010.

GENERAL SERVICES ADMINISTRATION

NATIONAL ARCHIVES AND RECORDS SERVICE

Two records management handbooks in the managing retrieval series were issued in 1975. The *Microform Retrieval Equipment Guide* provides prospective users or purchasers of microform retrieval equipment with a basis for comparing available equipment against agency requirements. Factors that affect equipment selection, operational and functional information about the equipment, and a discussion of microform equipment with specialized applications are contained in this handbook. The *Computer Output Microfilm* handbook is especially directed to those potential users in the Federal government having a limited knowledge of computers, microfilm, and information systems. It is intended to provide guidance in the application, design, evaluation, and use of computer output microfilm systems.

FEDERAL PREPAREDNESS AGENCY

NEW ORGANIZATION

In June 1975, the Office of Preparedness was redesignated and established as the Federal Preparedness Agency. At the same time, the Mathematics and Computation Laboratory was transferred from the Corps of Engineers, U.S. Army, to FPA. The MCL functions as the principal research, development, and computational activity of FPA.

NEW INFORMATION SERVICES AND NETWORKS

An updated version of the generalized information management system (GSA/FPA/MCL/TM-208) was installed in the summer of 1975 for the UNIVAC 1108 digital computer. The new version provides state-of-the-art retrieval features and enhanced security and audit features. It permits random access to data by reference to both key fields and contents of textual fields. This is the first system, to our knowledge, that efficiently provides random access to the contents of text.

During 1975, FPA prepared, and transmitted to its regional offices, studies of several Federal regional reconstitution areas. These studies will constitute a detailed geographic source of information for the regional analyst and planner for determining the status of Federal regional reconstitution areas after a nuclear attack. The studies will also enable the selection of optimum Federal regional reconstitution areas for reconstitution of Federal and regional government activities in a nuclear emergency.

As part of its continuing efforts to improve the techniques for economic analysis, MCL entered into three contracts in 1975. The first contract will construct a bridge between the Christensen-Jorgenson Model and the National Income and Product Accounts variables. A second will provide for the refinement of the personal tax and residential investment equations of the MCL-Thurow Model. The third provides access to the Chase Econometric Forecasting Model and its associated forecast and data bases. FPA also contracted to Data Resources, Inc., for its econometric forecasting services and the use of its data bases.

JOINT PROGRAMS WITH OTHER AGENCIES

In the area of resource data base development and management, FPA has organized an interagency interest group for training, coordination, and evaluation in support of the continued development of the national resource data base.

During March 1975, FPA participated in the REX 75 interagency exercise, which simulated the civilian response to nuclear attack against the United States. REACT, the computerized interactive transattack damage prediction system, was used for the first time in such an exercise for damage assessment and resource evaluation on a real-time basis.

In the spring, FPA participated in a study of the effects of civilian austerity, material substitution, and expanded production on requirements for stockpiles of strategic and critical materials. MCL performed the civilian austerity portion of that study and provided computation in support of the other two. This report was in direct response to a request from the Joint Committee on Defense Production.

In the summer and fall of 1975, FPA participated in a study of factors significant to the evaluation of stockpile objectives. MCL chaired an interagency working group on civilian requirements and substitution, and provided computations of supplies, requirements, and imbalances of strategic and critical materials under a wide range of policy alternatives. The report of this study was prepared in response to a request from the National Security Council.

PUBLIC BUILDINGS SERVICE

LIFE CYCLE PLANNING AND BUDGETING MODEL

The Public Buildings Service is currently engaged in a major research contract to develop a life cycle planning and budgeting model (LCPBM). The intent of this model is to provide a system that will promote awareness of the total cost of facility ownership. The model will aid in establishing life cycle cost budgets at both the building and systems level, in addition to forecasting alternative life cycle costs for operations. The LCPBM consists of three subcomponents. These three subcomponents will calculate the quantity characteristics of system interfaces on a parameter basis, apply unit cost to resultant quantities for the calculation of both acquisition and operational costs, and finally, will provide an economic model for the treatment of cash flow, discount factors, and inflation over given timeframes.

LIFE CYCLE COSTING

PBS has published the results of its initial efforts in the development of life cycle cost treatment of its buildings and facilities. The publication, entitled *Life Cycle Costing in the Public Buildings Service, Volume I*, deals with life cycle costing as it affects development, design, construction, and operation. The document defines a life cycle cost system, provides supportive economic analysis concepts appropriate to the PBS building acquisition process, and also includes a state-of-the-art survey and subject bibliography.

Application of the formulated concepts relies heavily on use of a proposed hierarchical building and performance cost information format (UNIFORMAT) presently under development by GSA, in coordination with other Federal constructing agencies, the American Institute of Architects, Associated General Contractors, and other organized professional segments of the building design and construction industry.

CONSTRUCTION MANAGEMENT CONTROL SYSTEM

PBS now has a mandatory nationwide requirement for the application of a standardized construction management control system (CMCS) for the management of the design and construction process for all PBS new construction projects exceeding $5 million. This is a network-based management system for schedule, cost, and financial control. The system employs both computer-generated and manually prepared analyses and reports. All progress scheduled, progress payments, shop drawing control, change order control, and financial management reports are computer-generated. Systematic cost control is accomplished by manual take-off and pricing, with some computer-generated cost control reports. PBS plans within the next year to modify CMCS to incorporate the PBS UNIFORMAT system of cost classification, to develop a mechanism for establishing a computer-based project-cost data base, and to otherwise improve the effectiveness of the cost and financial control aspects of the system.

ENERGY CONSERVATION GUIDELINES FOR EXISTING OFFICE BUILDINGS

The Energy Conservation Guidelines for Existing Office Buildings were published in February 1975. This document is intended to be used primarily by GSA in the remodeling, maintenance, and operation of approximately 10,000 office buildings in its inventory. A goal of 75,000 BTU per gross square foot, per year of energy input at the building boundary, has been established for use by architects and engineers in the redesign of Federal office buildings. If the recommendations are followed, it is possible to realize savings of 20 to 30% over current energy consumption in existing buildings.

This document is now on sale to the construction industry and the general public through GSA Business Service Centers.

ENERGY GUIDELINES FOR NEW BUILDINGS

GSA first published the document, *Energy Conservation Design Guidelines for New Office Buildings* in January 1974. Guidelines are necessary to ensure that the designs of all new Federal office buildings are energy efficient. The initial issue was a spin-off from the research effort in connection with the Manchester Energy Conservation Demonstration Project. The Guidelines are currently in use in the GSA regional offices, and over 6,000 copies have been distributed free of charge to other Federal agencies and to state and local governments, and sold to other interested parties through the GSA Business Service Centers.

The second edition of these *Guidelines* reflects GSA reaction to the comments received on the first edition and includes new material on solar energy systems and the computer analysis of building thermal characteristics and energy requirements. The skillful application of these *Guidelines* will make it possible to meet an energy goal of 55,000 BTU per square foot per year, which will reflect a reduced energy consumption of up to 50% of current practice.

ENERGY CONSERVATION DEMONSTRATION BUILDING

The new Federal Office Building, currently under construction in Manchester, New Hampshire, was designed from the beginning to be GSA's Energy Conservation Demonstration Building. The building is scheduled for occupancy in late 1976.

This demonstration building will include many innovative features which will reduce the amount of energy required to operate the building. Energy-conserving features are provided in the following general areas: basic architectural design (configuration, orientation, fenestration, insulation), mechanical-space conditioning, electrical and lighting, and plumbing. Different mechanical-space conditioning systems are provided on each of the office floors, to permit direct comparison of their respective performance and energy efficiency. A large solar collector will be provided on the building roof to provide approximately 25% of the energy required for building heating and cooling, thus reducing the demand on conventional energy sources. The building is expected to operate with at least 40 to 60% less energy usage than do comparable modern existing buildings.

The Federal Energy Administration and the National Bureau of Standards have joined with GSA to make a complete field evaluation of the innovative features following occupancy, based on a sophisticated built-in instrumentation system and a survey of occupant reaction. The building, in effect, will be a living laboratory.

ENVIRONMENTAL DEMONSTRATION BUILDING

The new Federal Office Building to be constructed in Saginaw, Michigan, will include many innovative environmental and energy conserving features, such as: low heat gain/heat loss through walls, some of which are protected by earth-beams; earth fill and landscaping on one-third of the roof; rainwater collection from around the building and from parking areas for lawn sprinkler system; purification and recycling of the flushing medium for toilets and urinals, thus eliminating the need for municipal water for this purpose; and an energy-efficient space-conditioning system. In addition, an 8,000 square-foot solar collector is expected to provide all of the energy required for domestic hot water and a major portion of the energy required for building heating and cooling. A complete field evaluation of the performance of the buildings innovative features is planned, based on a sophisticated built-in instrumentation system and survey of occupant reaction.

CONSTRUCTION MANAGEMENT SITE DATA INVENTORY (GSA FORM 1239).

This form is a unique compilation of architectural, planning, engineering, energy conservation, and environmental data. Its purpose is to gather design and planning data vital to the selection of proper building sites. It includes questions on planning, environment conservation, zoning, streets and alleys, traffic, subsurface conditions, seismic conditions, energy conservation, utilities, and sewers. It is hoped that the data gathered will aid Federal projects in meeting the goals of conservation, protecting the environment, and serving the needs of the tenant agencies.

SEISMIC GUIDELINES

PBS has recently developed a three-volume series of seismic design guidelines for new and existing buildings. Volume II of the series provides evaluation techniques which allow a priority ranking for a number of buildings that may require upgrading. These new guidelines provide for the evaluation of both structural and nonstructural building components. Copies of this material will be available from GSA Business Service Centers after February 1976.

AIR-SUPPORTED STRUCTURE.

PBS has recently received the results of a feasibility study which was commissioned to develop a new concept for Federal office buildings. The concept involves a large-volume clear-span space whose surrounding wall consists of an earth-beam. The roof features a triple-layered pneumatic fabric which admits solar energy when conditions are favorable, and reflects it when conditions are unfavorable. The results of this study, which incorporates work platforms to accommodate office functions in a park-like setting, are contained in a technical report entitled *Megastructure: A New Concept of Federal Office Building Design for the General Services Administration*.

TECHNICAL MANUAL TO ASSESS ENVIRONMENTAL IMPACTS.

GSA has contracted to a consultant to write a manual for use by GSA regional and Central Office staffs in assessing environmental impacts. It is intended to assist them in the preparation and review of draft and final environmental impact statements. The focus of the work is restricted to the assessment of those impacts resulting from typical actions undertaken by GSA, i.e., new public buildings construction, repair and alteration of existing public buildings, and the disposal of surplus real property.

THERMOGRAPHICAL TECHNOLOGY.

Detailed investigation and careful study have been made on the application of the thermography of buildings for the purpose of energy conservation. Thermographical technology is not new. It is a means of obtaining a thermal imagery through temperature measurement, using infrared techniques. The technique is based on the fact that all matter, as a result of its heat content, continuously emits energy in the form of infrared radiation (infrared radiation manifests as heat). Building defects in insulation, heat leakage in building construction joints, or improper operation will cause excessive energy consumption, which can be detected. An infrared camera transforms the infrared radiation emitted by the object of measurement into electrical signals, which are converted into a monochrome image on the screen of an oscilloscope. Thermography has the following advantages compared with other methods of temperature measurement: instant display, no interference, and measurement may be made from great distances.

GSA, in conjunction with NASA has performed a thermographic fly-over of the Federal Center in Denver, Colorado, to utilize this technology in pursuit of energy conservation. Once the slides are interpreted and subsequent correlations are made through on-site inspections, further information will be analyzed. This process will be expanded if proven feasible.

SYSTEMS APPROACH TO FIRESAFETY.

GSA's goal-oriented systems approach to firesafety, first applied to a limited extent in the Seattle Federal Building, has been fully developed and has been applied to a number of Federal buildings. The systems approach is an innovative mathematical method of manipulating the complex factors which combine to make a firesafe building. Instead of designing to a fixed consensus code, a level of safety is selected and the building is designed to that level of safety. In the past year, buildings employing the goal-oriented systems approach have been completed in Philadelphia and in Richmond, Oregon; others are in various stages of design and construction. The systems concept has been well received by the Society of Fire Protection Engineers and the National Fire Protection Association, and is being studied by several of the major consensus code groups.

ACOUSTICS FOR OPEN PLANNED OFFICE SPACE

PBS has developed performance criteria and reproducible test methods to ensure speech privacy in open planned office space. Test method PBS-C.1, *Method for the Direct Measurement of Speech Privacy Potential (SPP) based on Subjective Judgment*, uses a jury of three technical observers, alternating as speaker, monitor, and listener, to determine Speech Privacy Potential (SPP). SPP requirements can be verified through an objective test, PBS-C.2, *Method for the Sufficient Verification of Speech Privacy Potential (SPP) based on Objective Measurements*.

The criteria, which are now requirements for all PBS office space, have been incorporated into the PBS Performance Specification for Office Buildings. The criteria have also been incorporated into performance specifications for the separate procurement of an integrated ceiling and background system, and for free-standing space dividers.

These test methods have been submitted to the American Society for Testing and Materials Committee E-33 on Environmental Acoustics, for eventual adoption as ASTM tests.

For further information, contact, Mrs. Dawn Linthicum, Management Systems Division, Office of Management Serivces, Office of Administration, General Services Administration, Washington, D.C. 20405, (202) 566-1777.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The NASA Scientific and Technical Information Program is administered by NASA's Scientific and Technical Information Office (STIO). It offers broad access to a computerized data base containing citations of more than 1.3 million documents related in the broadest sense to aeronautics and space. Reports of NASA research and development receive automatic primary distribution under this program. STIO is responsible for the publication of conference proceedings, significant compilations of R&D results, data compilations, and other special publications (an important 1975 special report was *Apollo Expeditions to the Moon,* (NASA SP-350), written by participants in the NASA manned space program). Other services include technical translation; literature searches; selected current awareness announcements; publications of two abstracting/indexing journals, one of which includes announcements of ongoing aerospace research compiled by the Smithsonian Science Information Exchange; preparation of specialized and recurring bibliographies; timely reference services; and an array of specialized publications, guides, and tools that enables users of the information system to be aware of new and pertinent information and to retrieve needed information rapidly and efficiently. Of basic importance are the online retrieval of information from the NASA computerized data base by an interactive system, NASA/RECON, and user access to over twenty other (non-NASA) scientific and technical data bases.

The NASA Scientific and Technical Information Facility (a Government-owned, contractor-operated facility under NASA contract to Informatics Information Systems Company) and the Technical Information Service of the American Institute of Aeronautics and Astronautics (AIAA), New York City, form the two primary support operations of NASA's STI system. During 1975, the NASA STI Facility was moved to a new location at Linthicum, Maryland, near the Baltimore/Washington International Airport. A major increase in information handling capacity was achieved by the installation of an IBM 360/65 computer system with 3.2 billion bytes of online disk storage, effectively doubling the previous storage capacity.

During 1975, about 80,000 new document citations, from 3,000 worldwide report sources and from 1,500 scientific and technical journals, were added to the NASA information store. Of these, 75% were announced in the abstract journals *STAR (Scientific and Technical Aerospace Reports)* and *IAA (International Aerospace Abstracts).*

NASA instituted user service charges in 1975 for the automatic distribution of NASA documents announced in *STAR*. Any domestic Government contractor engaged in manufacturing or research and development related to aerospace work may subscribe to this service. Certain NASA document and announcement services are available without charge to various NASA-associated organizations and educational institutions.

Over 3 million copies of documents, most of which were in microfiche form, were provided to more than 1,100 organizations, of which half were in the private sector. The combined individual user comminity is estimated to be in excess of 100,000.

Literature search service continues to be provided to NASA-related organizations. Nine thousand searches were performed during 1975, using the interactive RECON system, in addition to direct use of RECON by individuals having access to computer terminals at NASA Headquarters and research centers. Searches of non-NASA data bases are also available. NASA has exchanged computer terminals with DDC and has established an agreement with NOAA, so that the respective data bases can be mutually interrogated. These computer terminals, both those at NASA and those involved in the exchange with DDC, are CRT terminals.

Library records for post-1968 books and journals held by 12 NASA research libraries, together with the Library of Congress Machine Readable Catalog (MARC), have been added to the NASA data base. Full-text searching with proximity relationships was added to the RECON retreival capability for the agency-wide book holdings during 1975. The NASA Library Network (NALNET) online system offers multiple access to over 170,000 book citations and 6,000 journal titles. Searches may be made by title; author; LC, NASA and MESH terms; LC card numbers, various classifications, corporate sources; and contract and grant numbers. Services include current-awareness lists, computer-printed catalog cards, shelflists, and other products incorporating local or network holdings. A union list of journals held agency-wide was published in 1975, together with lists of local journal holdings.

INTERNATIONAL ACTIVITIES

NASA's STIO works closely with the European Space Agency (ESA) in exchange of documents and machine-readable scientific and technical information. Bibliographic citations covering information acquired by NASA are regularly disseminated to ESA to assure availability to all European member countries. In return, ESA acquires scientific and technical information generated by its members, as well as by other European nations. This is abstracted and indexed by ESA and transmitted to the NASA system. ESA also follows the NASA guidelines in preparation of microfiche to assure compatible microfiche interchange, and provides translations of significant European scientific and technical journals and individual documents.

The Director of STIO is Deputy Chairman of the Technical Information Panel of NATO's AGARD. During 1975, STIO prepared two custom bibliographies for inclusion in the AGARD Lecture Series publications, and initiated work on a multiyear cumulative index to AGARD reports that will have been published during 1974-1976. A cooperative effort is continuing on updating the AGARD Multilingual Dictionary. The Dictionary will be produced by NASA computer, and, being on magnetic tape, will be available through remote computer terminals in both the United States and Europe. An additional feature of the magnetic tape availability will be the ease and economy of updating.

In addition to these major international efforts, STIO maintains bilateral exchange agreements with 228 governmental, industrial, research academic, and other private-sector organizations in more than 54 countries.

For further information, contact: Harold E. Pryor, Director, Scientific and Technical Information Office, Office of Industry Affairs and Technology Utilization, National Aeronautics and Space Administration, Code KS, Washington, D.C. 20546, (202) 755-3548.

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

The National Commission on Libraries and Information Science (NCLIS) is a permanent and independent Federal agency. NCLIS is responsible for developing, and recommending to the Congress and the President, overall national plans to assure optimum provision of library and information services adequate for the information requirements of the people of the United States. NCLIS is authorized to advise Federal, state, and local government agencies and private organizations regarding library and information services, and to contract with Federal and public and private agencies to carry out its functions.

During calendar year 1975, NCLIS completed regional hearings held to obtain information from, and encourage the support and cooperation of, both professionals and lay people for the projected national information service network. The network would be available to the general public; the public's access to the network would be through local information professionals. After the hearings had been completed, NCLIS published its official program document, *Toward a National Program for Library and Information Services: Goals for Action.* This is a distillation of the comment and criticism that was obtained from the broadest possible representation of the community affected by the Commission's area of responsibility. It provides a framework for a balanced evolutionary approach to achieving adequate library and information services for everybody, as required by law.

The recommended national program is an overall structure within which current deficiencies may be corrected, and future requirements addressed. It would coordinate and reinforce all Federal and state efforts to support local and specialized information services. Eight objectives are specified:

(1) Ensure that basic library and information services are adequate to meet the needs of all local communities;
(2) Provide adequate special services to the appropriate constituencies, including those not presently served;
(3) Strengthen existing statewide resources and systems;
(4) Ensure basic and continuing education for personnel essential to the implementation of the national program;
(5) Coordinate existing Federal programs of library and information service;
(6) Encourage the private sector to become an active partner in the development of the national program;
(7) Establish a locus of Federal responsibility charged with implementation of the national network and coordination of the national program under the policy guidance of NCLIS (the locus agency should have the authority to award grants and contracts and to promote standards, but should be supportive rather than authoritarian, and should coordinate rather than regulate);
(8) Plan, develop, and implement a nationwide network of library and information services.

The goal of NCLIS' proposed program is to meet these eight objectives.

Toward implementing these objectives, NCLIS, during 1975, awarded a contract for the preparation of a national inventory of library needs to obtain a more accurate quantitative assessment of the gap between those services now being provided and actual requirements. The enabling legislation to achieve objective (1) will be based on this assessment. NCLIS also undertook the development of plans for the implementation of a Continuing Library Education Network and Exchange (CLENE). CLENE is a nonprofit corporation, with which NCLIS maintains liaison; the project addresses objective (4) and became operational in 1975. NCLIS also initiated a study of the near-term (five to seven years) role of the Library of Congress in the evolving national program. The study, which is related to objective (8), will also indicate, in order of priority, those steps required to ensure that the LC fulfill its role in the national program.

NCLIS participated in the work of the Government advisory committee charged with developing the U.S. position on the broadening of the scope of the Florence agreement (which governs the duty-free exchange of books and other cultural and informational materials between countries). This effort also addressed objective (8), relating international activities to the development and operation of a nationwide network of library and information services.

In 1975, NCLIS submitted to Congress eight resolutions, each of which involved specific recommendations on legislation being considered by Congress. These recommendations included the following proposals:

- Action on the proposed copyright law be considered interim until the report of the Committee on New Technological Uses of Copyrighted Works (CONTU) and NCLIS' photocopy study are completed, and that the text of the legislation include provision for review of the CONTU report. (The latter recommendation has since been accepted).
- Legislation providing Federal funding of libraries (Higher Education Act II, Library Services and Construction Act, the Medical Library Assistance Act) should be extended, and specific revisions included to achieve a more effective utilization of funds.
- The U.S. Office of Education should strengthen and increase the effectiveness of its Office of Libraries and Learning Resources, so that the latter may serve as a more effective advocate for library services within the entire educational process.
- The U.S. Office of Education should lend support to strengthen the state library agencies to enable them to assume leadership in the development of a national network of library and information services.

In the context of the resolutions submitted to Congress, NCLIS voiced its support of the work of the Special Committee on the National Science Foundation, of H.R. 10230 which instructs the Science Advisor to the President to survey ways and means for improving the Federal effort in scientific research and information-handling (and the use thereof), and recommended the development of a strengthened program by the Division of Science Information of NSF.

Additional efforts of NCLIS toward implementing the objectives of its national program for library and information services that were begun in 1975 include:

- Definition of a study to assess the effectiveness of Federal funding of public libraries, to support recommendations for effective Federal funding legislation;
- Definition of a study to determine the volume and characteristics of library photocopying of serials for the purpose of formulating rational copyright legislation;
- Planning for the establishment of a task force for development of a plan, in cooperation with NCLIS, for a national periodicals system.

NCLIS maintained extensive communication with professional and trade associations, Federal libraries and other Federal agencies, state and local library agencies, and other individuals, institutions, and organizations having an interest in the national program. NCLIS also reiterated its support for the White House Conference on Library and Information Services, and again called on the President to request from Congress the appropriation of $3.4 million required for the conference.

For further information, contact: A. Trezza, Executive Director, National Commission on Libraries and Information Science, 1717 K Street, N.W., Washington, D.C. 20036, (202) 653-6252.

NATIONAL SCIENCE FOUNDATION

DIRECTORATE FOR SCIENTIFIC, TECHNOLOGICAL, AND INTERNATIONAL AFFAIRS

The National Science Foundation (NSF) contributes to progress in scientific and technical information in several ways. Primarily, NSF generates scientific and technical knowledge through its broad support of research, both basic and applied, in many areas of science and technology. The results of this research, to a great extent, appear in the published literature. In addition, the results of the research supported by some of the Foundation's directorates are reported in the technical literature and made available through NTIS.

NSF also supports efforts to improve the mechanisms that make available scientific and technical information to scientists, engineers, educators, managers, and other groups. NSF's primary instrument for this purpose is the Office of Science Information Service (OSIS). However, other elements of NSF contribute to the support of research designed to improve computer and telecommunications applications, and still others occasionally assist organizations in publishing scientific and technical monographs and serials; from time to time, they assist professional societies and other groups in the creation and maintenance of collections. Considerable attention is given to exploring possible improvements in scientific curricula and associated activities that will contribute to scientific education from the grade school to university level. Support is provided to scientists and engineers to attend meetings in other countries to present papers and to acquire information about scientific research being done elsewhere. As another aspect of its international activities, NSF, through OSIS and the Division of International Programs, participates in programs to aid international organizations concerned with the interchange of information and individual countries seeking to improve their respective STI capabilities.

Finally, NSF's contribution to STI activities includes a program conducted through the Directorate for Research Applications which focuses on the utilization of STI for national needs.

OFFICE OF SCIENCE INFORMATION SERVICE*

The Office of Science Information Service (OSIS) was established in 1958, following enactment of the National Defense Education Act (NDEA). Title IX of that Act directed NSF to establish a Science Information Service to:

(1) "provide, or arrange for the provision of, indexing, abstracting, translating, and other services, leading to a more effective dissemination of scientific information," and
(2) "undertake programs to develop new or improved methods, including mechanized systems, for making scientific information available."

NSF has implemented this mandate by "arranging for the provision of improved means for dissemination of scientific information," rather than by operating its own science information services. Consequently, funds have been used to support research and development whose results can contribute to improvements in public and private services.

Activities In 1975

During 1975, OSIS continued to develop and consolidate the new program approach begun in 1974, an approach based on a critical analysis of its past science information activities and of new conditions prevailing. The current program consists of five elements:

–Research
–Economics of Information

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* Under an NSF-wide general reorganization, the Office of Science Information Service changed its name to the Division of Science Information, under the Assistant Director for Scientific, Technological, and International Affairs. The program and functions of the office, however, remain unchanged.

- Access Improvement
- User Requirements
- National and International Coordination

Research. Objectives of this program are twofold: (1) to establish a theoretical structure which will enable a coherent and systematic approach for future research and application efforts, and (2) to support fundamental research in knowledge-retrieval systems.

In connection with the former objective, research is being supported in the communication of signs and symbols which are the basic elements of messages. Results should contribute to an understanding of how transmitted symbols convey the desired meaning and how the received meaning affects behavior. Still other research is aimed at providing a general theory of information transfer, based on the integration of information theory and decision-making theory.

In connection with the latter objective, scientific writing has been found to contain repetitive grammatical structures, which vary by discipline. This finding will eventually enable the search and retrieval of relevant word clusters in particular science subfields. A parallel effort has developed the basis for a theory of information regeneration which will help lay the foundation for inference retrieval. Also being supported is research in large-scale simulation and gaming in the area of inter-institutional computer networking, system performance measurement and problems associated with large-file management, literature compaction, document delivery, and man-machine interfacing.

Economics of Information. The purpose of this program is to provide data on supply-and-demand relationships for STI, and on the cost-effectiveness of information systems and services and of sustaining continuous, long-term improvements in the dissemination of information. Examples of research conducted in 1975 are:

- Development of statistical indicators of scientific and technical information and communication has been undertaken. When completed, the results will be of considerable value to the information community.
- Evaluation of the use of computerized scientific information services as a replacement for scientific journals in the chemistry program of a developing undergraduate college.
- Improved dissemination and use of STI.
- Assessment of the use of STI in the public sector.
- Development of cost-benefit methodology for STI, and its application to information analysis centers.
- Evaluation of the impact of natural-resource information on land-use decision-making.
- A cost-benefit model of some critical library operations in terms of the use of materials.

The Economics of Information Program is relatively new and most of the above are in progress.

Access Improvement. The objective of this program is to stimulate major, cost-saving innovations in the recording and distribution of scientific literature and data, mainly through the integration of networks capable of providing assured access to information. Some of the accomplishments of 1975 are as follows:

- Design studies of the editorial processing center were completed and presented in a two-day seminar in Washington and in a monograph.
- A project to develop a system for capturing numerical data for remote interactive access was initiated. This project complements the text-capturing capability of the editorial processing center.
- A guide to innovation in scientific publication was distributed—one product of a continuing survey of the state-of-the-art in scientific communications.
- The first element of a projected national inventory of STI resources, a machine-readable inventory of 2,100 abstracting and indexing services, was completed.
- A project was initiated to establish a test facility for experimentation with electronic communication within geographically dispersed research communities.
- An integrated vocabulary was produced for searching energy R&D literature covered by ten major information systems.

User Requirements. The value of information services to users is the test of their effectiveness. This program seeks to provide data needed to create user-responsiveness, and hence information services that are more viable economically and which will contribute to the more productive use of information. During 1975, the initial development of a long-range planning data base to assist STI service managers to operate more efficiently and effectively was completed. An experiment in California has demonstrated successfully a role for public libraries as linking agents between small industrial firms and STI data bases. The results of the study were picked up in other states, where they are now being implemented. Curriculum materials for demonstrating the use of modern STI services were developed and introduced in short courses for college teachers of science and engineering. Several tests of more cost-effective and user-responsive alternatives to traditional forms of communication were initiated, including the use of two-page summary articles for initial reporting of research results and the delivery of engineering-handbook-type information by fully electronic means.

The User Requirements program engages in an ongoing dialogue with members of the user community, including engineering and research managers, through their professional organizations.

National and International Coordination. The purpose of this program is to improve the coordination among the various information services in the U.S., and between U.S. and foreign information services. In 1975, cooperative research efforts, seminars, and symposia with Egypt, India, Japan, and Mexico were undertaken, and two successful exchanges of results in science information research were conducted with the U.S.S.R. Initial efforts to expand the program's involvement in technology transfer were undertaken. A preliminary set of goals and objectives to guide U.S. participation in, and assess benefits from, international information programs was developed. OSIS continued to act as the U.S. focal point in information programs of UNESCO (UNISIST) and the Organization for Economic Cooperation and Development (OECD). OSIS was also instrumental in the preparation of the *Federal Scientific and Technical Communication Activities: 1974 Progress Report*, working cooperatively with the other Federal agencies involved in STI activities.

Awards Made in 1975

A total of 81 awards were made by the National Science Foundation through OSIS during FY 1975 for improvement of science information activities in the U.S. For those interested in specific awards, a *Summary of Awards FY 1975* (NSF 75-31) has been prepared and is available on request from the Office of Science Information Service, National Science Foundation, Washington, D.C. 20550.

Proposal Solicitations

During 1975, a vigorous program was undertaken to encourage the information research community in both the not-for-profit and for-profit sectors to participate in the research programs of OSIS. This was done in accordance with the policy of OSIS to enlarge the circle of awardees to include researchers who, because of the orientation of previous OSIS programs, might not have been qualified to participate, or have been interested in participating. Three guidelines for the preparation of unsolicited proposals were issued by OSIS: (1) access improvement, (2) economics of information, (3) user support. During 1975, a request for proposals for work in *Improved Dissemination and More Productive Use of Scientific and Technical Information* was released. All of these invitations brought forth a considerable number of proposals of relatively good quality, more than could be supported with the funds available.

Communications

The year 1975 saw an expansion of the program of communication and interaction begun the previous year. OSIS provided leadership in bringing together the Federal Scientific and Technical Information Managers for periodic meetings which featured discussions of common problems, important issues affecting the public and private sectors, and speakers to discuss consequential matters. The Head of OSIS, Dr. Lee G. Burchinal, continued to disseminate a monthly statement highlighting OSIS-related activities; this statement appeared in a number of journals serving the information community. A number of seminars and colloquia on subjects dealing with OSIS research and subjects of broader interest were held in conjunction with professional society meetings.

Interaction with foreign STI authorities increased during 1975 to include Mid-East and Latin American countries. OSIS continued to act as the Governmental focal point in UNESCO's UNISIST Global Scientific and Technical Information Program, as well as in OECD's Information Policy Group program. Close liaison took place between OSIS and the National Commission on Libraries and Information Science (NCLIS) on matters of mutual interest. Professional members of the OSIS staff prepared and presented papers at conferences of professional societies and information groups.

DIVISION OF INTERNATIONAL PROGRAMS

The Foundation's Division of International Programs (INT) fosters international cooperation in research, the exchange of scientists, and the transfer of information between U.S. and foreign scientists. INT's programs and activities include:

(1) bilateral research, exchange, and seminar programs with 15 countries;
(2) the Special Foreign Currency Research Program;
(3) a National Academy of Sciences Exchange Program with the academies of the U.S.S.R. and East European countries;
(4) U.S. participation in international scientific organizations;
(5) international travel grants.

Bilateral Research and Exchange Programs

The Foundation serves as Executive Agency for cooperative science programs with Argentina, Australia, Brazil, France, Hungary, India, Italy, Japan, Mexico, New Zealand, Poland, the Republic of China, Romania, Spain, and the U.S.S.R. U.S. scientists participate in joint research projects, seminars, and exchange-of-scientists programs with these countries. Under the Latin American Cooperative Science Program, funds were provided for 25 cooperative scientific activities in seven countries. The East European Cooperative Science Program supported

13 grants for work involving American scientists and those of Hungary and Romania. Thirteen joint working groups implement cooperative research in the areas of the U.S.-U.S.S.R. Agreement on Cooperation in Science and Technology.

Special Foreign Currency Research Program

The Foundation awarded grants for cooperative research projects in excess-currency countries and made travel awards to U.S. scientists to attend meetings, develop projects, and visit or work in laboratories in the excess-currency countries (Egypt, India, Pakistan, Poland, and Tunisia). Eight contractors in these countries translated approximately 53,000 pages of scientific literature from 17 languages in 1975. These contractors also translated 1,500 patents and compiled 16 issues of an educational bibliography. Translations are available to the public through NTIS.

National Academy of Sciences Exchange Program

The Foundation supported scientist-exchange programs between the National Academy of Sciences (NAS) and the respective Academies of Science of the U.S.S.R. and the East European countries. In 1975, 160 U.S. scientists visited the U.S.S.R. and East Europe, and 111 scientists from these countries visited the U.S. Partial support was provided to NAS for scientific exchange with the People's Republic of China.

International Organizations

U.S. scientific participation in planning, organizing, and conducting international science activities in both Governmental and non-Governmental organizations is also supported by the Foundation. The work of the International Institute for Applied Systems Analysis (IIASA) in Vienna was partly supported by NSF through the National Academy of Sciences, which is the U.S. member. NSF contributed toward NAS participation in 31 international scientific unions and organizations on behalf of the U.S. scientific community.

International Travel Programs

The Foundation provided travel support for 540 American scientists to attend international scientific congresses and symposia outside the U.S. during 1975.

DIRECTORATE FOR ASTRONOMICAL, ATMOSPHERIC, EARTH, AND OCEAN SCIENCES

OFFICE OF POLAR PROGRAMS

The Foundation funds and manages the U.S. Antarctic Research Program and is the specified clearinghouse for and source of Antarctic research information. These functions assist the U.S. in adhering to the Antarctic Treaty. The Foundation's responsibilities also include promoting the exchange of Arctic research data.

The Library of Congress continued to abstract and index Antarctic scientific and technical literature under contract to the Foundation. The project covers the works of all countries from 1951 to the present, and over 21,000 titles have been listed. Results are disseminated monthly as *Current Antarctic Literature*; indexed, bound volumes are published every 18 months as the *Antarctic Bibliography*.

The American Geographical Society in 1975 published the last of 19 planned map-and-text folios in the *Antarctic Map Folio Series*. The American Geophysical Union published *Birds of the Antarctic and the Subarctic* in the *Antarctic Research Series*. To speed production and lower costs, "volumes" now are published as separate papers suitable for the purchaser's collation and binding. Both series are supported partially through Foundation contracts.

Centers at the State University of New York (SUNY) at Buffalo, the Florida State University, and the Smithsonian Institution continued to receive and curate polar ice core, sediment core, rock, and natural history specimens. Computer catalogs at each institution make information on the specimens available to researchers.

The Foundation published the bimonthly *Antarctic Journal of the United States* and the quarterly *Arctic Bulletin*.

INTERNATIONAL DECADE OF OCEAN EXPLORATION

The Office for the International Decade of Ocean Exploration (IDOE) has a contractual agreement with the Environmental Data Service (EDS) of NOAA, to provide for the archiving and dissemination of data developed by U.S. participants in the IDOE. Working cooperatively with EDS, the IDOE Office developed guidelines for the submission and dissemination of the environmental data collected, to insure that the data are adequately documented, cataloged, disseminated, and stored. Additionally, as specified in the guidelines, EDS receives copies of all scientific reports generated by IDOE projects. These copies are forwarded to the appropriate data centers and to NTIS for further dissemination.

DIVISION OF EARTH SCIENCES

The Division of Earth Sciences supports U.S. participation in the International Seismological Center at the University of Edinburgh. This Center, sponsored through the International Union of Geodesy and Geophysics (IUGG), collates data received from seismograph stations throughout the world and publishes monthly bulletins of all significant earthquakes, a semiannual bibliography of seismology, and a regional catalog of earthquakes. It also recently published a World Seismicity Map, showing locations of all earthquakes in the period 1968-74.

The Division of Earth Sciences also supports the microfilming and distribution of the seismograms from foreign stations of the World Wide Seismic Network (WWSN). Funding is channelled through the U.S. Geological Survey; the actual work is performed by NOAA.

DIRECTORATE FOR RESEARCH APPLICATIONS

During FY 1975, the report dissemination activities of the Document Center of the Research Applied to National Needs (RANN) Program were augmented through the awarding, by competitive bid, of a support contract to Capital Systems Group, Inc., of Rockville, Maryland.

With the assistance of Capital Systems, an automated system for storing and processing basic document inventory and bibliographic data, and for producing various management and bibliographic products, has been developed and implemented. Over 600 different reports have been processed into NTIS. Over 65,000 copies of more than 4,300 RANN documents have been inventoried, cataloged, and arranged within a special facility for dissemination. Special requests for over 2,000 copies of RANN reports have been handled.

In addition to these special dissemination efforts by the RANN Document Center, sales figures from NTIS indicate that, since the RANN program began in 1971, over 112,000 copies of the 1,140 different RANN reports registered with NTIS have been sold by that agency.

DIRECTORATE FOR MATHEMATICAL AND PHYSICAL SCIENCES AND ENGINEERING

DIVISION OF CHEMISTRY

The Chemical Analysis Program is supporting a program at Clarkson College of Technology entitled *Compilation, Critical Evaluation, and Publication of Polarographic and Related Electrochemical Data*, to expand and update a comprehensive but critically evaluated compilation of the fundamental data that have been obtained on organic, organometallic, biochemical, and inorganic substances by polarography and a number of related electrochemical and electroanalytical techniques.

Pending in the structural chemistry program is a proposal from NAS to "study the present status, needs, and benefits of data compilation and evaluation in relation to the National R&D effort." If supported, the proposal will be jointly funded by the Chemistry Division and OSIS.

DIVISION OF MATHEMATICAL AND COMPUTER SCIENCES

The Division of Mathematical and Computer Sciences supported studies to assist in developing the resource-sharing potential of computer networking for science research and education. Emphasis was placed on pertinent organizational, political, legal, and economic considerations, including network management and the need for specialized resources and services. Efforts to stimulate basic research on problems of data structure and organization were undertaken. Particular emphasis was placed on the study of algorithms for searching and sorting very large files, and on research on the data structures associated with those algorithms. Research in theoretical computer science, and in programming systems bearing on the fundamentals of coupling computers and information, was also supported.

DIVISION OF ENGINEERING

Electrical Sciences and Analysis Section

The Electrical Sciences and Analysis Section supports information-related activities by sponsoring research related to workshops and communication. Each of the Section's programs engages in these activities and distributes research results to the engineering community.

In the Control and Automation Program, research on automated analysis of information sources, such as remotely-sensed data or electronically derived images, continues to play a major role. Feature extraction and decision analysis provide means for reducing voluminous data by machine methods and presenting the results in a format that is useful to the application. Image enhancement techniques and image reconstruction methods also play an important role in solving information transfer problems. Several workshops are held annually to exchange research results with the scientific community.

In the Electrical and Optical Communications Program, research is being supported which will help produce large-capacity communication networks. The major thrust of the research supported in optical communication systems is directed towards the long-range objective of providing ultrahigh-capacity, fully integrated optical systems involving new device discoveries. In large-scale computer communication networks, basic research is needed in the principles of network design, including topological design, adaptive routing techniques, flow and congestion control, and access and concentration methods.

The Devices and Waves Program has supported electronics research that is directed toward long-term improvements in communications and computer technology. One example of this research is a study of the application of superconducting Josephson junction devices to logic systems. This application promises to provide the basis for a substantial advance in the computer and terminal switching capacity of individual components. Another example of this research is a study of the interaction between electronic and thermal effects in integrated circuits to increase the number of electronic components on a single chip.

One of the areas supported in the System Theory and Applications Program is coding theory. The development of efficient coding algorithms can lead to more efficient ways to transfer information in large systems.

Another area of research is estimation theory, which is concerned with methods of extracting information-containing signals in the presence of noise.

Engineering Mechanics

The Engineering Mechanics Section supported the Joint Committee on Tall Buildings, which is operated through Lehigh University. Among the objectives of the Committee is the collection of research results related to the planning, design, construction, and regulation of tall buildings, and the arranging for publication through professional organizations of this information in monograph form, so that it will be available to all interested individuals.

In the area of Wind Engineering, support was provided for the Wind Engineering Research Council, one of the objectives of which is to "implement the dissemination and exchange of information between research workers in the various disciplines of wind engineering." The problem of portability and verification of computer software for engineering, a special type of information, was the subject of a special report entitled *National Institute for Computers in Engineering*. This report was the result of grant support.

In the area of Mechanical and Industrial Engineering, a special publication about the gathering of research information on linkages, cams, and gears is scheduled to be printed by a commercial publisher. This will make more readily available to the public the results of research programs supported by the Engineering Mechanics Section in this area.

DIRECTORATE FOR BIOLOGICAL, BEHAVIORAL AND SOCIAL SCIENCES

The Ecosystem Studies Program provides support for the Biome data banks (Coniferous Forest, Desert, Eastern Deciduous Forest, and Grassland Biomes). The publication of an Interbiome Data Abstract, and a project to compile and analyze this ecological software, have constituted efforts to increase the utility of these data banks. Ecosystem Studies also supports files on Natural Areas and on Experimental Ecological Reserves.

The Ecology Program has provided support for the development of a computerized storage and retrieval system on pesticide use in the San Joaquin Valley of California, based upon the State of California's registry of pesticide use. It also supports a computer-based record of winter bird populations throughout the U.S. for the last decade, based upon the National Audubon Society's published Christmas counts.

The Biological Research Resources Program supports certain systematic collections and cultures of living material. These collections of preserved and living material are systems for the storage and retrieval of basic biological information, just as libraries and computer-based systems are. The Program supports seven botanical collections considered to be natural resources, 35 such collections of extant animals (2 for molluscs, 5 for insects, 4 for fish, 4 for amphibians and reptiles, and 4 each for birds and mammals), and 5 collections of fossil species. Thirteen living-organism stock-centers are supported—one for algae, 2 for bacteria, 3 for fungi, 3 for *Drosophila melanogaster*, one for the house mouse, one for amphibians, one for corn, and one for barley.

In the social sciences, the Foundation makes occasional awards to help support the social science data archive facilities operated by the Inter-University Consortium for Political Research, a partnership between the University of Michigan and over 225 universities, colleges, and nonprofit institutions. Other data archive projects are supported on a highly selective basis from time to time, including archival resources needed by groups of investigators engaged in collaborative research and large data bases required for research in such specialized fields as social indicators.

For further information, contact: Dr. Lee G. Burchinal, Head, Office of Science Information Service, National Science Foundation, Washington, D.C. 20550, (202) 632-5824.

SMITHSONIAN SCIENCE INFORMATION EXCHANGE

In 1975, the Smithsonian Science Information Exchange (SSIE) completed its 26th year of service to researchers, policy makers, and scientific management personnel. A number of significant events took place during the year, representing innovations or improvements in methods and services developed to enhance the availability of the Exchange's information to its users.

In March 1975, the SSIE file of prepublication information about research in progress was made available for online searching through the facilities of the widely used SDC Search Service. The availability of SSIE's data base for online remote interrogation meets the need of research managers, investigators, and information specialists who require immediate access to ongoing research information. It supplements the many other methods currently used by SSIE to disseminate information about current research throughout the United States and other countries. The system is tied into a nationwide communications network; most subscribers can link their terminals to the computer through the equivalent of a local telephone call.

Particularly noteworthy was a General Accounting Office (GAO) report released early in December 1975, based in part on information obtained from SSIE, which recommended that "a comprehensive unclassified information system for materials research and development should be established, building on existing information in the SSIE." The report also noted as a part of the study that "only the SSIE had existing capability to develop pertinent data." The results and recommendations developed from this study were presented by the Comptroller General in testimony before a hearing by Senator Tunney's Subcommittee on Science, Technology and Commerce, on December 2, 1975.

It is anticipated that some or all of these recommendations will be translated into positive action during 1976, to insure a more complete and timely data base to meet the requirements of Federal administrators and policy makers in this important area of research.

On an international level, SSIE was responsible for the development of an International Symposium on Information Systems and Services in Ongoing Research in Science (in collaboration with the UNISIST program of UNESCO) which demonstrated the interest in this subject worldwide. Approximately 185 people from 49 countries attended this symposium, which served to focus attention on the need for improved communication and planning in the development of information systems throughout the world. As a result of this meeting, the UNISIST program staff is planning to develop a program designed to insure that future international activities in this important area of information science are expanded and coordinated, with the objective of encouraging international exchange of information. On a more specific basis, UNISIST agreed to study the feasibility of projects which would deal with guidelines for standardization in the processing of ongoing research information and information transfer. UNISIST would also explore the development of a program for providing advisory services on national needs in this area, and technical assistance to member states for the establishment and development of national information services within the global STI system, and would encourage the development of international cooperation in this field by organizing appropriate meetings and acting as an international focal point. A committee may be created to establish needs and priorities and to evaluate the results of such a program. SSIE expects to play an integral role, on both a bilateral and an international basis, under whatever arrangements are established by UNISIST.

As another part of its current international activities, SSIE recently completed its collection of information about ongoing research in the field of energy in five European countries and Canada. From this information, a catalog of approximately 2,000 research projects has been prepared. This one-year task was undertaken at the request of the Interagency Committee on International Cooperation in Energy Research and Development, with funds provided by NSF. The catalog is expected to be printed and distributed in early 1976. A second year of effort will be undertaken in 1976 to obtain more complete and up-to-date information from the same countries and also from four others. This effort exemplifies SSIE's ability to obtain foreign input on a bilateral basis in selected areas of ongoing research.

SSIE continued to work closely with U.S. agencies in the development of products and services designed to provide wider dissemination of ongoing research information. The publication of ongoing research information in NASA's *STAR* has been continued for a second year, thus making both information about ongoing research and bibliographic information in aerospace fields available in a single publication.

SSIE prepared a number of compilations of ongoing research in new fields during 1975, some of which not only represented new subject areas but also involved new approaches by SSIE to output format. One directory in the field of research in natural disasters (prepared for the Federal Disaster Assistance Administration) included bibliographic references of Government technical reports obtained from NTIS, as well as ongoing research information. Another, on pesticides and pest control, prepared for EPA, used computer output microfiche programs devised by SSIE. A number of other compilations were done in selected subject areas at the request of various Federal agencies, including the Department of the Interior, and the Dental Research and National Cancer Institutes of NIH. One effort concerning toxicological research involved the production of a series of directories of ongoing research on a quarterly schedule, rather than annually, so that information would be available on a more timely basis.

In 1975, SSIE was designated by the National Cancer Institute as the Current Cancer Research Project Analysis Center (CCRESPAC), a component of the International Cancer Research Data Bank Program. In this role, SSIE will provide a total service in the area of ongoing cancer research, including the collection, indexing, and output of a variety of services on an international basis. Over 3,000 new projects in cancer research have already been added to the existing data base; six major publications about ongoing research in various fields of cancer research have been prepared and delivered to national and international participants in the program. In addition, arrangements have been made to provide information on cancer research projects online through NLM's CANCERLINE program.

Cooperative efforts to improve input are continuing with a number of organizations. SSIE has recently completed an agreement with ERDA to provide its entire ongoing, non-classified, research information file from a central source and on a regular basis. The information is expected to be provided in magnetic tape form and will result in more complete and timely input by ERDA. SSIE is now exchanging ongoing energy research information at the national level with the Oak Ridge National Laboratory on a regular basis. By early 1976, SSIE will have the most complete and up-to-date data base in the country concerning national and international ongoing energy research information. Continuing discussions were undertaken with a number of Federal agencies to improve their input to SSIE to insure more complete and timely coverage of their total ongoing research programs.

SSIE is also currently exploring ways to work more closely with non-Federal organizations to obtain access to information on their research in progress. One such organization is the Electrical Power Research Institute (EPRI), which has now developed a data base of ongoing research. EPRI's research budget will increase from $55 million in 1975 to $135 million in 1976, and information on their research in progress would by useful to SSIE users.

In the output sphere, SSIE is working with a number of societies and professional groups to increase the demand for its products and services, and to develop new services which might be useful to their members. As an example, SSIE is currently providing a quarterly update service on *Nuclear Instrumentation and Analysis in the Physical Sciences* through the Nuclear Research Information Center of the American Nuclear Society. A number of cooperative programs are currently underway with other societies and associations, some of which involve announcements of Research Information Packages in selected subject areas of their journals. This particular output product has become an increasingly large one, particularly as a result of the preparation of new brochures oriented to a specific scientific discipline (e.g., chemistry, physics). The response is particularly good when these brochures are distributed using specialized mailing lists, or displayed at exhibits of professional societies and associations in a particular area.

In summary, SSIE has developed a closer working relationship with more Federal agencies in 1975 than ever before, and its products and services have increased and become more diversified. SSIE also demonstrated its ability to promote international cooperation in the exchange of ongoing research information, particularly in areas of high interest to the U.S. Government. SSIE anticipates that its activities both nationally and internationally will continue to expand in 1976.

For further information, contact: Dr. D.F. Hersey, President, Smithsonian Science Information Exchange, Inc., Room 300, 1730 M Street, N.W., Washington, D.C. 20036, (202) 381-5514.

LIBRARY OF CONGRESS

NATIONAL REFERRAL CENTER

The National Referral Center, during 1975, focused its attention on online computer applications. Early in January, the entire data base of the NRC achieved online status, available for searches by LC and Congressional staff members. Access of the NRC data base is via the Library's SCORPIO (Subject-Content-Oriented Retriever for Processing Information Online) system. SCORPIO is an interactive software system which allows searching by subject, organization name, item number, and by city and state. A SCORPIO command ("Limit") also makes it possible to refine and reduce large sets of items, and enables users to specify value and other comparison against hitherto nonsearchable data elements. The bulk of the NRC data base also became accessible through the ERDA/RECON network. A test portion of the data base was supplanted on July 23, 1975, by a 7,000-item data base, representing all resource descriptions the text of which had been approved by the organizations described therein. These online capabilities permit direct access to the NRC data base by a growing community of users and provide faster retrieval of pertinent sources for answering requests and screening potential candidates for inclusion in directories and specialized lists.

The informal *List of Selected Resources* continued to be well received throughout the year. These listings of organizations with information capabilities on various subjects are distributed free of charge by NRC upon request.

SCIENCE AND TECHNOLOGY DIVISION

At the same time that the NRC data base became available through the ERDA/RECON system, the Science and Technology Division obtained access to other ERDA/RECON data bases. When added to those already available through the Library's SCORPIO, and through the ORBIT (SDC's) and DIALOG (Lockheed's) search services, the S&T Division has online access to an aggregate of about 12 million references.

At the end of April 1975, a bibliographic data base of approximately 92,000 references in science and technology, selected from the Library's MARC data base, became available—the Selected Science and Technology (SSNT) file. SSNT utilizes SCORPIO, and includes those English-language books cataloged since 1969, and approximately 6,000 titles from the Library's Science Reading Room (the latter including handbooks, and scientific encyclopedias in various languages). SSNT is a monographic data base and does not include abstract journals. It is accessible through more than 250,000 unique index terms, including subject terms, author titles, and LC card and call numbers. Those titles that are available in the Science Reading Room are so indicated when displayed on the CRT terminal. A second data base—the National Referral Center Master (NRCM) file—contains descriptions of more than 12,000 organizations capable of providing information in the physical, engineering, biological, and social sciences.

Both the SSNT and NRCM files are accessible through an online, interactive, CRT terminal that is located in the Science Reading Room and available for public use. Users are given necessary instruction by tutorial posters, by SCORPIO itself, and, if required, by reference librarians in the Science Reading Room who use SCORPIO as an aid to preparing specialized bibliographies and the *LC Science Tracer Bullet* series. This terminal is an experiment in the public use of an online, interactive, CRT terminal and is an early test of the future "electronic catalog." Results to date indicate that the average user can quickly learn the few basic instructions required to retrieve information. The public terminal is available for use from 8:30 a.m. to 8:00 p.m., weekdays, and from 9:00 a.m. to 4:00 p.m. on Saturdays.

Monthly bulletins and variously cumulated indexes continued to be generated from the common data base serving both the Army-sponsored *Bibliography on Cold Regions Science and Technology* and the NSF-sponsored *Antarctic Bibliography*, with its monthly *Current Antarctic Literature Bulletins.* Volume 7 of the *Antarctic Bibliography* was published in October, and work was started to permit photocomposition of future volumes using the Videocomp. *Wilbur & Orville Wright: A Chronology Commemorating the Hundredth Anniversary of the*

Birth of Orville Wright was published in mid-July. Titles published in the *LC Science Tracer Bullet* series provided wide coverage in both locale and subject. Distributed free upon request, these literature guides provide strategies for searching the scientific and technical and public-affairs literature on topics of current interest.

PRESERVATION OF LIBRARY MATERIALS

The Preservation Research and Testing Office of the Library of Congress undertakes pure and applied research in all aspects of the deterioration of paper, the preservation and restoration of paper and paper artifacts, practical problems in restoration of such artifacts, and related fields. Information regarding these programs and the results of research undertaken by the Preservation Research and Testing Office laboratory are disseminated through special reports issued by the Library of Congress under its Preservation Monograph series, or by articles in recognized journals, such as *TAPPI, Journal of the American Chemical Society, Museum News, Studies in Conservation, Bulletin of the American Institute of Conservation,* and *Restaurator.*

Some of this research has resulted in U.S. Patent 3,898,356, entitled *Methods of Deacidifying Paper,* and in two pending patents for *The Non-aqueous Deacidification of Paper by Means of a Solution of Methyl Magnesium Carbonate* and an *Improved Method of Deacidifying Paper.*

While no joint agency programs are underway, the Preservation Research and Testing Office does maintain close liason with related work at the National Bureau of Standards.

MARC ACTIVITIES

MARC DISTRIBUTION SERVICE

By the end of calendar year 1975, LC had made available in machine-readable form the cataloging records for approximately 600,000 monographs (in English, French, German, Spanish, and Portuguese), 32,000 films, 23,000 serials, and 20,000 maps. These records are distributed weekly or monthly through the Library's MARC Distribution Service and are used for cataloging control, reference, and bibliographic products, for LC and for over 70 subscribers in the U.S. and abroad.

MARC EDITORIAL DIVISION ACTIVITIES

The planned expansion of the languages covered by MARC is on schedule. With the majority of the requested positions approved, recruitment and training is underway to convert monographs in Dutch, Italian, Romanian, Norwegian, Swedish, Danish, and Finnish that have an imprint date of 1976. Agreement has also been reached to expand coverage to all current cataloging in German, Portuguese, and Spanish, and to interpret "MARC language scope" to include the designated languages and all related languages.

During the past six months, the MARC Editorial Division has verified 51,955 records, bringing the total number converted to 629,600. These figures represent records for both monographs and films in English, French, German, Portuguese, and Spanish, as well as COMARC records. In addition, records for 11,848 monographs and films have been updated and 7,660 CIP records have been converted to full MARC records.

With the cooperation of the Cataloging Instruction Office, the MARC Editorial Division is preparing to process audiovisual materials cataloged under the revised Chapter 12 of the Anglo-American Cataloging Rules. The responsibility for initial input is being altered to include not only the keying records but also any needed editing and catalog comparison.

MARC RETRIEVER

Twenty-three monthly searches, including three in the area of science and technology are being made of the MARC data base with a retrieval program. In addition to these ongoing requests, searches were made to produce a variety of products, such as a printout of Canadian imprints published in 1975, a list of records containing the word "Abbreviations" in the subject heading, a bibliography on parks and recreation, a printout of Revolutionary War maps of Massachusetts, a list of published screenplays, and a bibliography of illustrated children's books.

MARC SEARCH SERVICE

The MARC Search Service is now operational in eight units of the Processing Department, and in 17 selected units in the Reference Department and Congressional Research Service.

The online MARC file is updated nightly to include all records input, verified, or subsequently changed by the MARC Editorial Division during the day. The file includes approximately 600,000 records for books, covering all languages with MARC scope, with approximately 550 new records added daily.

Records may be accessed by LC card number, by author/title search key, and by title search key. Keys are generated using main and added author entries, and bibliographic and uniform titles. Users may request that, for records responding to a search key, only those containing a certain word or string of characters anywhere within a specified element, or group of elements, in the record be selected for display. In many cases, this "qualification" technique reduces to a very few the number of responses to be reviewed by the searcher.

Training in the use of the system has been provided by the MARC Development Office to all users in the Processing Department and to Reference Department staff. Responsibility for such training has recently been assumed by the Cataloging Instruction Office.

Work is underway to make available through the MARC Search Service the bibliographic portion of records for new books on order. In addition, records for titles to which LC card numbers have been preassigned (other than CIP) will also be available through the service.

COMARC

The COMARC (Cooperative MARC) Pilot Project, conducted under a grant made to the Library of Congress by the Council on Library Resources (CLR) in December 1974, is exploring the feasibility of expanding the number of MARC records that can be made available through the Library's MARC Distribution Service by utilizing the records converted to machine-readable form by other organizations from LC source records (LC printed card, proofsheet, NUC entry). Participants in the COMARC Project are selected on the basis of (1) the completeness of the bibliographic data contained in their records, and (2) their adherence to the MARC format and conventions for content designation. Records are submitted to the Library in the MARC communications format. The headings and other access points are compared with those existing on the card in the Library's Official Catalog and the access points in the COMARC record are updated where necessary. At present, the Washington State Library, the Information Dynamics Corp., and Northwestern University have been selected as participants, and test tapes have been received for analysis from three other potential participants. Processing has been completed for approximately 2,000 records; distribution of COMARC records is scheduled to begin in the spring of 1976.

Work is also proceeding in developing the means for various organizations to submit their location reports in machine-readable form to the Register of Additional Locations. The New York Public Library is the first organization to begin sending reports in this manner. As a complementary development to this effort, the specifications for the COMARC Pilot Project include provisions for participants to submit location reports either as part of the COMARC record itself or as separate records included with COMARC records.

An NUC Reporting Format has been designed through contractual support with funds made available by CLR. This format is considered to be provisional, pending further analysis of the entire NUC reporting system.

INTERNATIONAL ACTIVITIES

In July, an agreement was signed with the Bibliotheque Nationale for the non-exclusive exchange and distribution of each country's imprints through the respective MARC Distribution Services. This agreement is the Library's second international contract, the first being with the National Library of Canada. Negotiations are presently underway for an agreement with the National Library of Australia. International MARC records will be used as input to the Automated Process Information File (APIF), as well as for distribution through the Library of Congress MARC Distribution Service.

The first draft of UNIMARC (formerly the MARC International Format) was discussed in Paris at a closed meeting of the International Federation of Library Associations (IFLA) Working Group on Content Designators, and at an open meeting of all interested persons. The format will be revised, based on comments received by the staff of the MARC Development Office, and submitted to the working group for comment in February 1976, before the meeting scheduled for May. It is expected that the international format will be used for communication between national agencies, but not by LC for communication to its MARC subscribers.

A staff member of the MARC Development Office is serving on a steering committee selected to guide the MARC International Network study which is to be performed with contractual support under the auspices of the IFLA Office of Universal Bibliographic Control.

NCLIS STUDY

The initial phase of the study to be performed under a contract awarded LC by the National Commission on Libraries and Information Science (NCLIS) has begun. A major purpose of the study is to define the LC role in two evolving national bibliographic network. Lawrence Buckland of Inforonics, Inc., selected as principal investigator, will work under the administrative and technical direction of the MARC Development Office. As work proceeds, other experts will be called upon to provide special studies in their areas of expertise. An advisory committee has been selected to provide guidance during the conduct of the study.

REGISTER OF ADDITIONAL LOCATIONS

Work continues on the automated system for the Register of Additional Locations (RAL). The quinquennial (1968-1972) and the 1973 and 1974 annuals have been published by automated techniques. Data for the 1975 annual will be merged with this file; the cumulative data base will contain reports for an estimated 1.6 million titles, with approximately eight locations per title.

The merged Register file will be made available early in 1976 for searching online for the Library's Union Catalog Reference Unit, the Library entity responsible for responding to requests for the location of titles reported in the National Union Catalog. The online file will be updated biweekly; approximately 90,000 location reports are processed in this time span. The merged data base will also be used to produce a cumulative issue of RAL in microform.

The Library has submitted a proposal to a funding organization to perform, with contractual support, an RAL microform survey to elicit such information as (1) the need for the continuation of the printed RAL with its present scope and cumulative pattern; (2) desired frequency of the microform edition; and (3) characteristics of the institutions purchasing the microform edition (e.g., type of library, number of titles held, estimated number of interlibrary loan requests made through RAL). The purpose of this survey is to provide the information necessary to allow the Library to proceed with a service that could best meet the requirements of present and potential RAL users. In addition, funds are also being requested to identify potential machine-readable data bases that could supply location reports for the automated RAL, and to analyze the records contained in these files for reporting titles in machine-readable form to NUC.

SUBJECT HEADINGS

The 8th Edition of the Library of Congress Subject Headings (LCSH) was published and distributed. LCSH, and especially its significantly enlarged introduction, was the theme of one professional meeting, and has received considerable attention at a number of library meetings throughout the country since its publication. The introduction discusses, in considerable practical detail, the guidelines, policies, and patterns currently followed in revising and evolving the system. In addition to the introduction to the 8th edition and the supplements, regular contributions to *Cataloging Service* continue to keep the library world informed on such developments.

Beginning with headings approved in January 1976, a majority of those not formerly printed in LCSH will now be systematically included in supplements, annuals, and future main editions. These formerly "nonprint" headings will include chemical and biological names, family names, geographic regions and features, names of structures, and other similar types of names. This inclusion will begin to make available a hitherto unaccessible and valuable source of headings and references for other libraries.

DECIMAL CLASSIFICATION ACTIVITIES

Work on the 19th edition of the Dewey Decimal Classification continued. The Decimal Classification Editorial Policy Committee, at its November meeting, approved the following draft schedules (subject to the usual editorial refinements): 100, 200, 310, 320, 330, 360, 370, 380, 640, 650, 790, 800 and Table 3. Table 1 was returned to the editors for further study. Work has been completed on 355-359, 390, 560-590, 630, 700-770, and presentation will be made to the Editorial Policy Committee at its spring meeting. Work is underway on 610, with 020 to follow. A completely new 780 was prepared in the U.K., received by the Committee, and referred to music librarians for review and testing. Publication of Edition 19 is projected for early 1979. Refinement of the index is expected to constitute the major effort before this time.

Classification coverage continued to include those titles cataloged by the Library in English and French with a selection of titles in German, Spanish, and Portuguese. Coordination continues with the British National Bibliography, the Australian National Bibliography, and Canadiana.

SERIAL ACTIVITIES

CONSER PROJECT

Significant progress was made towards implementation of the CONSER (Conversion of Serials) Project, through which the Library, in cooperation with other libraries, will input a centralized machine-readable serials data base to the OCLC system. A two-day training session for CONSER participants was conducted in August 1975, and, in November, a coordination meeting was held with the National Library of Canada. The *MARC Serials Editing Guide: CONSER Edition* was published, and is now in its second printing. A terminal-operator manual has also been completed for the use of CONSER participants.

A cumulative tape of the MARC serials data base through mid-October 1975 has been loaded into the OCLC system, as has the Minnesota Union List of Serials (MULS) file. CONSER participants are now able to input or update records on the OCLC system.

The Library will input its new cataloging records for serials online to the system and is "authenticating" records for non-Canadian imprints that are input or updated by other participants. The National Library of Canada will perform a similar function for Canadian records. The National Serials Data Program (NSDP) and the International Serials Data System (Canada) are adding key titles and International Standard Serial Numbers (ISSN). All records input or authenticated by LC or NLC will be returned on tape from OCLC to the Library for distribution in the MARC Distribution Service. The Library has begun authentication on a limited scale, but online input of new records and full-scale authentication can begin only after OCLC completes the programming necessary to create the tapes to be returned to the Library. This is expected in 1976. The project continues to be managed by the Council on Library Resources.

NSF SERIALS PROJECT

Under an NSF grant, the National Serials Data Program is assigning International Standard Serial Numbers (ISSN) and key titles to serial publications in science and technology. Working within the framework of the CONSER project, NSDP is both inputting original bibliographic records on the OCLC online cataloging system and incorporating (or claiming) those records that are entered by other OCLC users, in an effort to identify a subset of serials within the CONSER data base that is of interest to the scientific and technical community. Through funds made available by addition to the NSF grant, arrangements have been made with the National Federation of Abstracting and Indexing Services to have the NFAIS-member services supply NSDP with surrogates (copies of title pages and/or covers) for scientific and technical serials. This procedure will accelerate the growth of the data base.

CONGRESS EXPANDS ITS USE OF ONLINE TERMINALS

Congress has significantly expanded its use of online computer terminals to access the Library's data bases. At the end of FY 1975, approximately twelve terminals were in use by both Houses. At the end of December 1975, 92 terminals were installed in the Senate and 60 in the House of Representatives, serving both members and committees. Six major data bases are available for search using SCORPIO. These include digests of the major legislation of the 93rd and 94th Congresses, a 100,000-record citation file of articles and reports of legislative interest, a file of extensive briefing material on approximately 180 major issues of national concern, and the SSNT and NRCM data bases. These data bases are created and supported by various Departments of the Library, including the Congressional Research Service, the Reference Department, and the Processing Department. Increased Congressional usage of these data bases has raised the average number of search sessions involving SCORPIO to approximately 700 daily.

For further information, contact: Mary Lethbridge, Information Office, Library of Congress, Washington, D.C. 20540, (202) 426-5109.

GOVERNMENT PRINTING OFFICE

SIGNIFICANT EVENTS OF 1975

The Public Printer appointed Carl A. LaBarre to the position of Assistant Public Printer (Superintendent of Documents), effective July 20, 1975. His major responsibilities are the sale of Government publications, the compilation of catalogs and indexes of Government publications, the distribution of Government publications to depository libraries, and the mailing of publications for Members of Congress and Government agencies. These responsibilities are fulfilled through the Documents Sales Service, the Documents Support Service, and the Library and Statutory Distribution Service.

The Government Printing Office (GPO) has five bookstores in the Washington metropolitan area, and 19 others located in cities throughout the country, In addition, selected documents are distributed through a distribution center located in Pueblo, Colorado. A new 34,000-square-foot warehouse building was dedicated there on November 21, 1975.

The Documents Sales Service has begun to move its retail sales function to new facilities in Laurel, Maryland. The new warehouse contains 382,000 square feet of space and affords wide aisles, large shelf space, and easy access to publications with ample work space.

In February 1975, the Depository Distribution Division of the Library and Statutory Distribution Service had a backlog of over 6,800 titles to be distributed to the depository libraries. At the end of the year, this backlog had been reduced to approximately 1,800 titles; it was expected that, by the end of February 1976, the backlog would be reduced to zero. While these titles were being processed, 95% of new receipts were processed within 72 hours of arrival. An average of 43 titles are distributed on a daily basis to 1,186 depository libraries. During the month of October, more than 1.8 million publications were distributed (the average monthly distribution is about one million).

The Library Division has commenced training in MARC tagging and Anglo-American Cataloging Rules. In October, an OCLC terminal was obtained and GPO became a part of the OCLC network. This project is being expanded to five terminals and will reduce the workload of the 700 libraries now in the networking system (which includes 250 depository libraries). Conversion to MARC and entry into the OCLC network will enable GPO to make its cataloging data immediately available to member libraries.

Two full-time depository library inspectors provide scheduled inspections of the libraries, notifying the librarians in advance of the inspection schedules. During 1975, inspections were made at 310 libraries. The inspection criteria emphasize the adequacy of document acquisitions and retrieval records, the retention of item cards for publications selected, and the time required for processing. The inspection report is a source of information for the Depository Library Council (and for GPO) concerning the various methods of processing, housing, and interlibrary-lending of these publications. The inspectors are also interested in microprint reading and printing equipment, outreach projects and plans, the staffing of the documents section of the library, and depository-related services provided by that staff.

The *Monthly Catalog Annual Index*, 1975 edition, was produced by linotron and was delivered by the end of March 1976.

Plans have been made to bring additional GPO documents under bibliographic control through the use of telecopiers in regional printing procurement offices. Three installations were operational at the end of 1975, with more expected in the first half of 1976.

CONSUMER INFORMATION CENTER PUBLICATIONS

Under a Memorandum of Understanding, dated December 18, 1972, the responsibility for the distribution of Consumer Information Center (CIC) publications was transferred from GSA to GPO, effective January 1, 1973. This transfer resulted from a joint study by GPO, GSA, and the Office of Management and Budget, which culminated in a recommendation by OMB that the distribution function could best be handled by GPO. The Documents Distribution Center in Pueblo, Colorado, assumed the task of processing CIC orders.

The responsibility for promoting CIC publications remained with GSA; to accomplish such promotion, GSA publishes a quarterly index containing approximately 200 titles and including both free and for-sale items. Additional promotion is through the news media.

During FY 1975, 5,641,955 CIC publications were distributed.

DEPOSITORY LIBRARY COUNCIL

The Depository Library Council of the Public Printer is composed of 15 librarians of stature, the majority from private, public, and university libraries.

The Council met in April and October 1975, in Storrs, Connecticut, and Washington, D.C., respectively. The recommendations of the Council to circulate and use Standards and Guidelines, provisionally for one year (1976), has been implemented, The material has also been forwarded to other professional librarians for comments and suggestions.

DEPOSITORY LIBRARY PROGRAM

The objective of the Depository Library Program for Government publications is to provide a class of libraries in the United States known as depository libraries, in which certain Government publications are deposited by the Superintendent of Documents for public use.

The purpose of this program is to make Government publications, including many which are out of print, available for reference in local areas. There are currently 1,186 depository libraries. There are no restrictions on the use of Government publications in depository libraries other than the general rules and regulations of the individual libraries. Depository publications remain the property of the U.S. Government.

Depository libraries are designated by Members of Congress, with provision for two Representative designations in each Congressional district, and four Senatorial designations in each state at large. By law, all state libraries, highest state appellate court libraries, and libraries of land-grant colleges are also depositories.

DOCUMENT SALES PROGRAM

The Document Sales Program is responsible for the sale of Government documents and also provides certain document distribution services for Government agencies. Primary functions include: procurement of sales documents; marketing; inventory control; warehousing; order processing; and mail list maintenance, addressing, and mailing. The Documents Sales Program provides a means whereby the public can purchase selected U.S. Government documents at nominal prices.

The *Selected United States Government Publications* is available at no charge. The *Monthly Catalog of U.S. Government Publications* lists, by agencies, the publications printed each month. It costs $27 annually, and includes those publications sold by Documents, those for official use, and those which are sent to depository libraries.

MICROPUBLISHING

The goal of this project is to decrease costs and provide more information to the libraries. Distribution of the *Code of Federal Regulations* in microfiche format commenced in October 1975. The program will be evaluated by 35 librarians and industry representatives for a period of four months. The evaluation reports and an economic analysis will be prepared and forwarded to the Joint Commitee on Printing for final determination of further efforts by GPO in the field of microforms.

For further information, contact: Carl A. LaBarre, Assistant Public Printer (Superintendent of Documents), U.S. Government Printing Office, Washington, D.C. 20402, (202) 275-3345.

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

A
ACORDE–A Consortium on Restorative Dentistry Education
ADD–Automatic Document Distribution
ADDS–AID Document Distribution System
ADMIT–Aeronautical Depot Maintenance Industrial Technology
ADP–Automatic Data Processing
ADTC–Armament Development and Test Center
AEC–Atomic Energy Commission
AEDPS–Automated Engineering Document Preparation System
AFB–Air Force Base
AFFDL–Air Force Flight Dynamics Laboratory
AFOS–Automation of Field Operations and Services
AFS–Air Force Station
AFSWC–Air Force Special Weapons Center
AGARD–NATO Advisory Group for Aerospace Research and Development
AGREP–Agriculture Research Europe
AHOS–Automatic Hydrologic Observing System
AIAA–American Institute of Aeronautics and Astronautics
AID–Agency for International Development
AIS–Abstracting and Indexing Services
ANTs–Abstracts of New Technology
APIF–Automated Process Information File
APTIC–Air Pollution Technical Information Center
ARS–Agricultural Research Service
ASCII–American Standard Code for Information Interchange
ASD–Aeronautical Systems Division
ASFA–Aquatic Sciences and Fisheries Abstracts
ASFIS–Aquatic Sciences and Fisheries Information System
ASI–Advanced Study Institute
ASIAC–Aerospace Structures Information and Analysis Center
ASTM–American Society for Testing and Materials
ATRIS–Air Transport Research Information Service
ATS–Applications Technology Satellite/Administrative Terminal System
AVLINE–Audiovisuals Online

B
BGN–Board on Geographic Names
BIOSIS–Biosciences Information Service of Biological Abstracts
BLM–Bureal of Land Management

C
CAI–Computer-Assisted Instruction
CAIN–Cataloging-Indexing
CANCERLINE–NLM/National Cancer Institute Online Data Base
CARIS–Current Agricultural Research Information System
CBT–Center for Building Technology
CCEA–Center for Climatic and Environmental Assessment
CCRESPAC–Current Cancer Research Project Analysis Center
CDBG–Community Development Block Grant
CHAOTIC–Computer and Human Assisted Organization of a Technical Information Center
CIC–Consumer Information Center
CINDAS–Center for Information and Numerical Data Analysis
CIP–Cataloging in Publication
CISTIP–Committee on International Scientific and Technical Information Programs
CLENE–Continuing Library Education Network and Exchange
CLR–Council on Library Resources
CMCS–Construction Management Control System
COBOL–Common Business Oriented Language
CODATA–Committee on Data for Science and Technology
COM–Computer Output Microfilm/Microform/Microfiche
COMARC–Cooperative MARC Pilot Project
CONSER–Conversion of Serials
CONTU–Committee on New Technological Uses
COSMIC–Computer Software Management and Information Center
COSTs–Continental Offshore Stratigraphic Tests
CPD–Office of Community Planning and Development
CPDB–Country Program Data Bank
CPI–Characters Per Inch/Critical Performance Indicator
CRT–Cathode Ray Tube
CUNY–City University of New York

D
DCASR–Defense Contract Administration Services Region
DD–Department of Defense
DDC–Defense Documentation Center
DIALOG–Nationwide Retrieval Network Operated by Lockheed Information Systems (non-representational Acronym)
DIS–Development Information Service
DISC–Development Information Systems Committee
DMAHC–Defense Mapping Agency Hydrographic Center
DOCLINE–Document Delivery Online
DOD–Department of Defense
DOI–Department of Interior
DOT–Department of Transportation
DOT–TDC–Department of Transportation–Technical Documents Center
DPCCP–Defective Parts and Components Control Program
DRIT–DDC Retrieval and Indexing Terminology
DWP–Deepwater Port

E
EDS–Environmental Data Service
EEC–European Economic Community (Common Market)
EIDB–Energy Information Data Base
EPA–Environmental Protection Agency

EPRI–Electrical Power Research Institute
ERA–ERDA Research Abstracts
ERDA–Energy Research and Development Administration
ERDA/RECON–ERDA's Remote Console System
ERDIG–Energy Research and Development Information Group
ERIC–Educational Resources Information Center
EROS–Earth Resources Observation System
ERTS–Earth Resources Technology Satellite
ESA–European Space Agency
ESD–Electronic Systems Division
ESDB–Economic and Social Data Bank
ESDU–Engineering Sciences Data Unit
ESIC–Environmental Science Information Center
EW–Electronic Warfare

F
FAA–Federal Aviation Administration
FAO–UN Food and Agriculture Organization
FAO/EEC–UN Food and Agriculture Organization/European Economic Community
FAS–Fuels Availability System
FDA–Food and Drug Administration
FEA–Federal Energy Administration
FID–International Federation for Documentation
FIPS–PUBS–Federal Information Processing Standards Publications
FPA–Federal Preparedness Agency
FRA–Federal Railroad Administration
FY–Fiscal Year

G
GAO–General Accounting Office
GIDEP–Government-Industry Data Exchange Program
GIS–Geographic Information System
GOES–Geostationary Operational Environmental Satellite
GPO–Government Printing Office
GSA–General Services Administration

H
HEW–Department of Health, Education and Welfare
HQ AFSC–Headquarters Air Force Systems Command
HQ USAF–Headquarters United States Air Force
HR–U.S. House of Representatives
HRIS–Highway Research Information Service
HUD–Department of Housing and Urban Development

I
IAA–International Aerospace Abstracts
IAC–Information Analysis Center
IAEA–International Atomic Energy Agency
ICSU–International Council of Scientific Unions
IDEA–Improved Data Effectiveness and Availability
IDOE–International Decade of Ocean Exploration
IFLA–International Federation of Library Associations
IIASA–International Institute for Applied Systems Analysis
IMS–Information Management System
IND–Investigational New Drug
INIS–International Nuclear Information System
INT–Division of International Programs, NSF
IOC–Intergovernmental Oceanographic Commission
IR–Informational Reports
IR&D–Independent Research and Development
IRS–International Referral Service
ISEF–International Science and Engineering Fairs
ISRAD–Integrated Software Research and Development
ISSN–International Standard Serial Numbers
IT–Information Technology
ITU–International Telecommunications Union
IUGG–International Union of Geodesy and Geophysics

J
JSHS–Junior Science and Humanities Symposium
JURIS–U.S. Department of Justice Retrieval Information System

K
KWOT–Keyword-Out-of-Title

L
LANDSAT–Land Use Planning Satellite
LC–Library of Congress
LCPBM–Life Cycle Planning and Budgeting Model
LCSH–Library of Congress Subject Headings
LDC–Less Developed Countries

M
MAI–Machine-Aided Indexing
MARAD–Maritime Administration
MARC–Machine Readable Cataloging
MAS–Minerals Availability System
MCIC–Metals and Ceramics Information Center
MCL–Mathematics and Computation Laboratory
MEDLARS–Medical Literature Analysis and Retrieval System
MEDLINE–MEDLARS Online
MESA–Mining Enforcement and Safety Administration
MESH–Medical Subject Headings
MHD–Magnetohydrodynamics
MIDSD–Management Information and Data Systems Division
MIL-STD–Military Standard
MOS–Model Output Statistic
MRIS–Maritime Research Information Service
MULS–Minnesota Union List of Serials

N
NAL–National Agricultural Library
NALNET–NASA Library Network
NARDIC–Navy Research and Development Information Center
NARS–National Archives and Records Service
NAS–National Academy of Sciences
NASA–National Aeronautics and Space Administration
NASA/RECON–NASA's Remote Console System
NATO–North Atlantic Treaty Organization
NAWDEX–National Water Data Exchange
NBS–National Bureau of Standards
NCIC–National Cartographic Information Center
NCLIS–National Commission on Libraries and Information Science
NDA–New Drug Application
NDEA–National Defense Education Act
NEIC–National Energy Information Center
NESS–National Environmental Satellite Service
NFAIS–National Federation of Abstracting and Indexing Services
NHPIC–National Health Planning Information Center
NHTSA–National Highway Traffic Safety Administration
NIE–National Institute of Education
NIH–National Institutes of Health
NIOSH–National Institute of Occupational Safety and Health
NIS–Noise Information System
NLC–National Library of Canada
NLDB–Natural Language Data Base

NLM–National Library of Medicine
NMFS–National Marine Fisheries Service
NNRLIS–National Natural Resources Library and Information System
NOAA–National Oceanic and Atmospheric Administration
NOISE–Noise Information Service
NOS–National Ocean Survey
NRC–National Referral Center/Nuclear Regulatory Commission
NRCI–Nuclear Regulatory Commission Issuances
NRCM–National Referral Center Master File
NRZI–Non-Return to Zero Indicator
NSA–Nuclear Science Abstracts
NSDP–National Serials Data Program
NSF–National Science Foundation
NSRDC–Naval Ship Research and Development Center
NSRDS–National Standard Reference Data System
NTDSC–Non-destructive Testing Data Support Center
NTIS–National Technical Information Service
NUC–National Union Catalog
NWS–National Weather Service
NWSRFS–National Weather Service River Forecast System

O
OASIS–Oceanic and Atmospheric Scientific Information System
OCLC–Ohio College Library Center
OCR–Optical Character Recognition
OCS–Outer Continental Shelf
OECD–Organization for Economic Cooperation and Development
OMB–Office of Management and Budget
ONAC–Office of Noise Abatement and Control
OPA–Office of Public Affairs
OPP–Office of Pesticide Programs
ORBIT–Online Retrieval of Bibliographic Information Time-Shared (Commercial System available from Systems Development Corp.)
ORNL–Oak Ridge National Laboratory
OSIS–Office of Science Information Service, NSF
OSRD–Office of Standard Reference Data
OT–Office of Telecommunications
OTAF–Office of Technology Assessment and Forecast
OWRT–Office of Water Research and Technology

P
PACFORNET–Pacific Coast Forest Research Information Network
PAIS–Project Accounting Information System
PAR–Planning Activity Report
PARCS–Pesticide Analysis Retrieval and Control System
PBAR–Planning, Budgeting, Accounting and Reporting
PBS–Public Building Service
PCC–Parklawn Computer Center
PEB–Prototype Environmental Buoy
PESTAB–Pesticides Abstracts
PIC–Pesticide Information Center
PLASTEC–Plastics Technical Evaluation Center
PPT–Project Performance Tracking
PTLRS–Publications and Technical Literature Research Section

R
R&D–Research and Development
R&T–Research and Test
RAL–Register of Additional Locations
RALI–Resources and Land Investigation
RANN–Research Applied to National Needs
RDT&E–Research, Development, Test and Evaluation
RECON–Remote Console
RFC–River Forecast Centers
RRIS–Railroad Research Information Service

S
S&T–Science and Technology
SAMSO–Space and Missile Systems Organization
SBA–Small Business Administration
SCORPIO–Subject-Content-Oriented Retriever for Processing Information Online
SDC–Systems Development Corporation
SDI–Selective Dissemination of Information
SDIE–Selective Dissemination of Information Extended
SETE–Secretariate for Electronic Test Equipment
SI–Systems of Units
SIGINT/EW–Signals Intelligence/Electronic Warfare
SMS–Synchronous Meteorological Satellite/also known as GOES–Geostationary Operational Environmental Satellite
SPP–Speech Privacy Potential
SRIM–Selected Research in Microfiche
SSIE–Smithsonian Science Information Exchange
SSNT–Selected Science and Technology
STAR–Scientific and Technical Aerospace Reports/Serial Titles Automated Records
STI–Scientific and Technical Information
STINFO–Scientific and Technical Information
STIO–Scientific and Technical Information Office, NASA
STORET–Storage and Retrieval System
SUNY–State University of New York
SVIC–Shock and Vibration Center
SWIRS–Solid Waste Information Retrieval System

T
TAB–Technical Assistance Bureau
THE–Technical Help to Exporters
TIAC–Technical Information Analysis Center
TIC–Technical Information Center
TIFA–Technical Information Functions and Activities
TILO–Technical Information Liaison Office
TIROS–Television in Infrared Observation Satellite
TM–Technical Manual for GSA Information Management System
TOXLINE–Toxicology Online Bibliographic Retrieval Service
TRISNET–Transportation Research Information Services
TRIS-ON-LINE–TRISNET Online
TSC–Transportation Systems Center
TSD–Technical Services Division

U
UBC–Universal Bibliographic Control
UMTA–Urban Mass Transportation Administration
UN–United Nations
UNEP–United Nations Environmental Program
UNESCO–United Nations Educational, Scientific and Cultural Organization
UNIFORMAT–Standard Code of Accounts for Construction (nonrepresentational acronym)
UNIMARC–Universal MARC (Machine-Readable Cataloging)
UNISIST–Nonrepresentational Acronym for the Joint ICSU–UNESCO Study
W
WAMI–Washington, Alaska, Montana, Idaho
WGA–Weekly Government Abstracts
WRSIC–Water Resources Scientific Information Center
WWSN–World-Wide Seismic Network

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